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THE LUNAR CRATER COPERNICUS.

BY EDWARD S. HOLDEN,

Director of the Lick Observatory.

THE accompanying figure* was made from a negative of the moon taken in the focus of the great telescope on August 25, 1890, at 8 hours, 0 minutes. The original picture of the moon was about five and one-half inches in diameter. A small part of the original showing the lunar crater *Copernicus* has been slightly enlarged and is given in the cut. The scale of the picture is such that the diameter of the whole moon would be about fourteen inches. The diameter of the crater itself is fifty-six miles. The cardinal points, north, south, etc., are indicated on the picture.

The walls of the ring-form are not perfectly circular, and they vary somewhat in height at different points.

Their general elevation above the floor of the crater is about eleven thousand feet, rising in places to twelve thousand or even thirteen thousand feet. The slope of the interior terraced wall is far more steep than that of the exterior; and this is a general rule in all such formations on the moon. The average exterior slope of lunar craters is six degrees to seven degrees, while the average interior slope is thirty-five degrees; that is, they are really very gently sloped mounds with a steep-sided pit in the midst. The terraces of the walls deserve careful attention; and, if the cut is examined with a common hand-magnifier, they can be seen a little better.

The floor of the crater is by no means smooth; and from it rise two groups of central peaks, the highest of which is some twenty-four hundred feet. Like all the central peaks of lunar craters, they are much lower than the bounding walls.

Copernicus is surrounded by a mass of mountains, hills and ridges of highly complex structure, and by a marvelous system of brilliant streaks radiating from the crater as a center, and extending in some cases for four hundred miles, or even more, till they meet similar streaks from other craters,—from *Kepler*, *Aristarchus*, etc.

This famous lunar mountain has been drawn and described many times. The very best drawings show a number of minor features which are much too small to be represented in the engraving; but no drawing has ever given anything like the true plastic effect, and even the very best drawings fail to show details which are evident on the original photograph.

To make such a drawing at the telescope, the observer must begin by

* Figure 1.

sketching in the forms and shadows accurately, correcting here and adding there, until after one or two nights a skeleton for his finished picture is obtained. By this time the shadows have so changed that most of the work must be put by for a month, until the same phase of illumination recurs.

The next opportunity must be devoted to more corrections and additions, and so on, lunation after lunation, until finally the best possible result is attained. For instance, Schmidt's first recorded observation of *Copernicus* was in 1842 and his last in 1873. And even this best possible result will be highly unsatisfactory. If it is a map it will lack plastic effect; if it is a picture the minor topographical features will necessarily be more or less neglected. It is here that photography becomes of priceless advantage. The preparations for the photograph must be made with the greatest care; the picture must be taken when the atmosphere is steady, clear and transparent; when there is no wind to shake the telescope. But when the right opportunity occurs an exposure of a few tenths of a second is sufficient; and a permanent autographic record of things as they are is obtained. The negative can then be treated in many ways and many differing copies obtained, each one true in itself, but each one bringing out some one point with especial clearness. In the first place it can be enlarged so as to bring out the minor features. It can be "en-smalled" so as to sacrifice the minor details, while the grander relations are made more prominent. Each

Figure 1.—The Lunar Crater Copernicus.
Enlarged from a Negative made with the Great Telescope of the Lick Observatory.

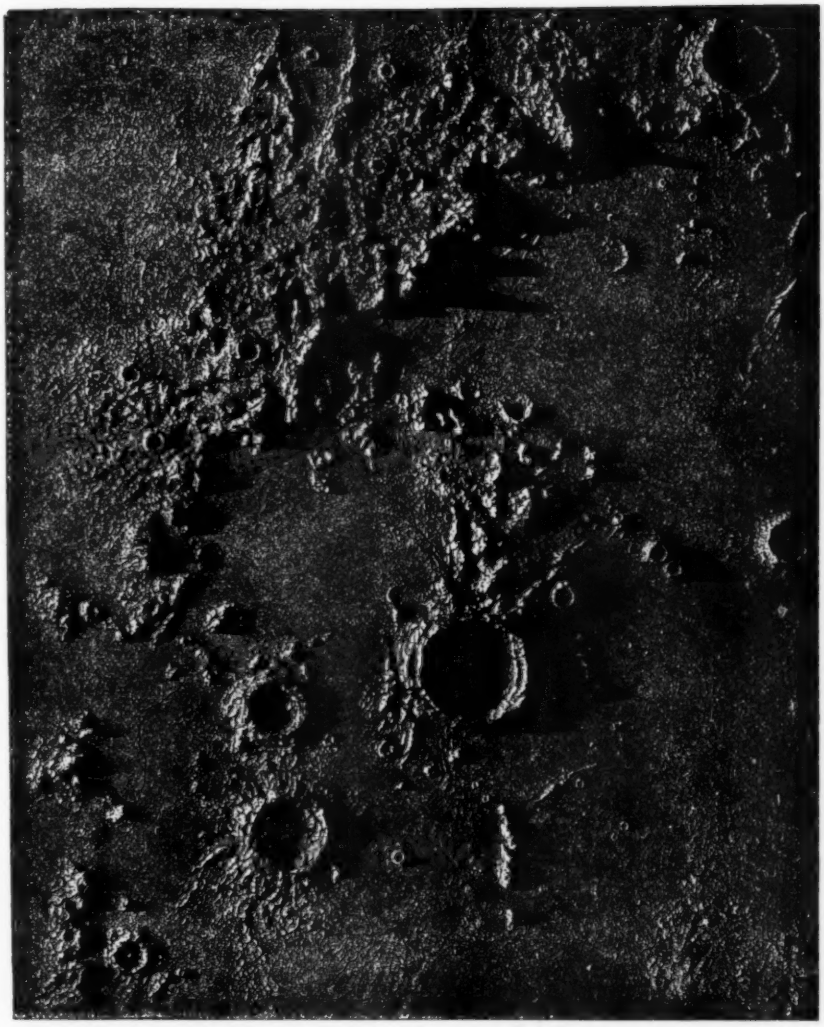


Figure 2.—The Lunar Apennines: Archimedes.

From "The Moon," by Nasmyth & Carpenter. London: John Murray.

of these results can again be copied in various manners. A certain exposure given to the copy will produce the best general plastic effect, and it is such copies that are desired by the artist and the general reader. But every single feature on the original has an illumination and a distinctness of its own. If we double or treble, etc., the first exposure, or if we halve it or take a third or even a tenth part of it in making our copies, each of the results will show some special feature or region or relation in a new and in a true light.

In this way we have made at the Lick Observatory discoveries of quite new features,—ruined craters fifty miles in diameter, long streaks and ridges, not suspected or even not perceptible in ordinary visual observation. The key of this method is that the *contrasts* can be artificially (photographically) increased. Great as have been the services of the long list of accomplished astronomers who have devoted themselves to selenography, I have no hesitation in saying that all their work taken together is not superior in intrinsic value to that which some "lonely and athletic student" could draw from a series of moon photographs like those in possession of the Lick Observatory, if he were to devote his whole time to this one subject. Unfortunately the very limited corps of observers at Mt. Hamilton will not permit us to undertake anything more than the mere production of the negatives. By depositing sets of these at certain scientific centers in America and Europe (as we do) they will be sure, sooner or later, to be studied by competent observers who have the necessary leisure.

It is a thousand pities that our income is not sufficient to allow us to make this thorough examination at the Observatory; but, at least, we are doing the next best thing by putting our negatives at the free disposition of all the world; and we are extremely fortunate in having secured the co-operation of a distinguished selenographer and artist,—Professor Weinek, director of the Observatory of Prague,—who is devoting a very large portion of his time to studying our negatives, which are regularly sent to him. The reproduction of such drawings as Professor Weinek's is a very delicate as well as costly matter; and here again the Observatory has been so fortunate as to find a friend—Mr. Walter W. Law of Yonkers, N. Y.—who is ready to bear the considerable cost of making the most perfect heliogravure copies.

If the reader will look at Figure 1 once more, he can probably follow the following identifications. The numbers in parentheses are the diameters of the craters in miles.

The prominent crater about three-fourths of an inch south of *Copernicus* (56), is *Reinhold* (31), and the next marked feature in the same direction is the crater *Landsberg* (28). Between *Reinhold* and *Copernicus* are two small deep crater-pits close together, A and A[1]. These are, by the way, *precisely* south of the center of *Copernicus*.

The crater half an inch north of *Copernicus* is *Gay-Lussac* (15); and the mountains in which the latter is situated are the lunar *Carpathians*, whose peaks vary from twenty-five hundred to seven thousand feet in altitude. Towards the northwest, about an inch in the picture, is the ring-crater *Eratosthenes* (37). From *Eratosthenes* two spurs of mountains extend, one southwards to the white outlines of the ring-crater *Stadius* (43), the other northwestwards. The region bordering these two spurs and lying towards the southeast is the *Sinus Æstuum*. The eastern wall of *Eratosthenes* is 7,450 feet above the outer surface, and 15,800 feet (the height of Mt. Blanc) above the interior of the crater.

On the original it is easy to trace a very interesting line of confluent crater-pits, which extends from the southeastern wall of *Stadius* towards the north; this line crosses the direction of the *Carpathians* about half way from *Eratosthenes* to *Gay-Lussac*.

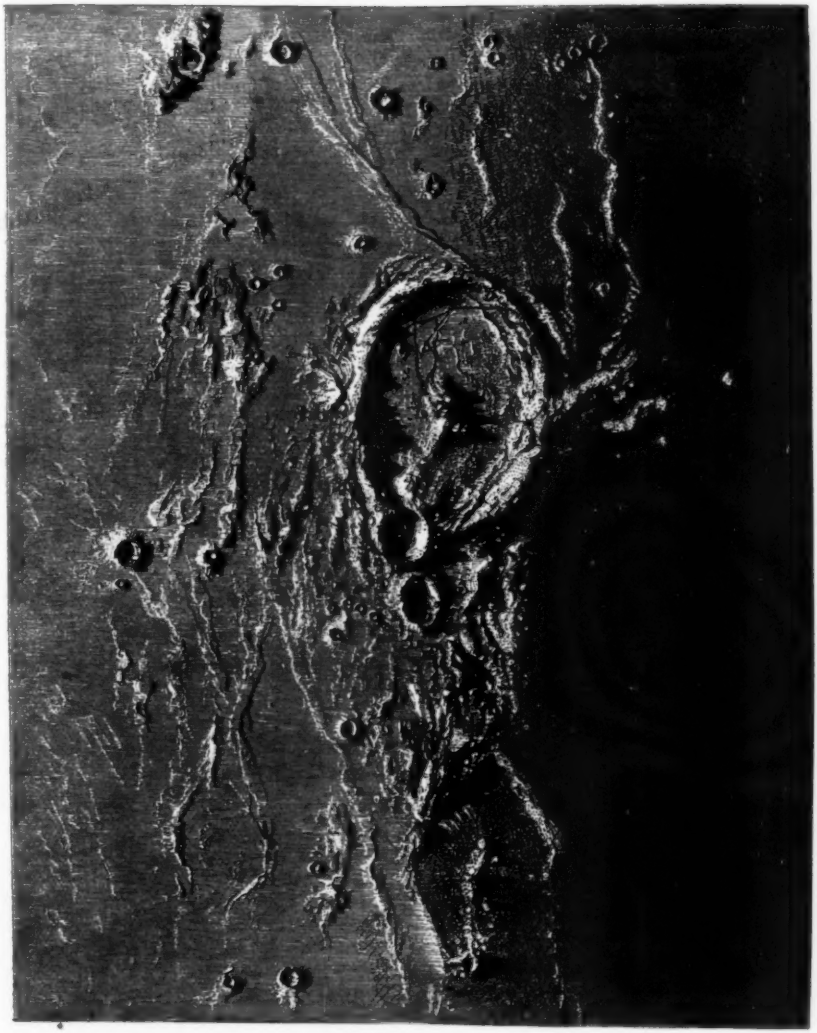


Figure 3.—Gassendi, November 7, 1867.

From 'The Moon, by Nasmyth & Carpenter. London: John Murray.

Here then is a line of weakness, and along this line there have been many separate small explosions, each leaving its mark in a crater. The region between this line and the western wall of *Copernicus* is literally filled with such small craters (they cannot be seen in the picture because they are only visible under one particular illumination). They are somewhat like the *fumeroli* of Italian volcanoes, on a larger scale.

The preceding description, though somewhat tedious, is necessary to put us in possession of the facts which our picture shows. But the real question now comes: What is the veritable explanation of all this? How shall we conceive to ourselves the process by which these features were formed? What is the relation of these craters to each other; of these bright streaks to the central crater; of the mountain chains, the rows of crater-pits, the interior terraces and hills to the volcanic forces by which they have been created?

If these questions can be answered we shall really know something of the features which so far we have merely viewed. Notwithstanding the immense pains which have been spent in delineations of the particularities of this and other regions of the moon's surface, there is as yet no general and satisfactory answer. We seem to be awaiting some observer who must be at once an astronomer and a geologist, and who will devote his whole life to the geology of the moon. Even the most fundamental questions are not settled. We have called *Copernicus* a "crater," that is, *the* crater of a lunar volcano. Some of the best authorities doubt whether it is a true crater at all.

As with this, so with other questions. Many, indeed most of them, are in doubt; and it is certain that they will not all be definitively settled until the advent of our geologist-astronomer, who may not yet be born.

Under these circumstances, it will not be impertinent if I try to express the convictions to which my own observations of this particular region have led me, especially if I do this with the necessary reserves, and with an apology in advance for any failures to properly interpret the geological evidence. No one can examine these wonderful structures without forming *some* idea as to their nature, and my own is somewhat as follows:

In the first place it is obvious at a glance that *Copernicus* is the dominating feature in the landscape. The surrounding ridges, crater-pits and bright streaks radiate from and depend on this central crater precisely as the corresponding features depend upon *Mauna Loa*. Its vast mouth (56 miles in diameter) is, in fact, a crater,—one crater, or rather a caldera. Sometime in the past, vast explosions of steam and lava have blown out this immense cavity and left these bounding walls somewhat as they are now. We must recollect that the volcanic forces on the moon have been far more violent than they are now on the earth. We have to remember too that the surface of the moon as we see it in this picture is but a single phase of the history of this landscape. There were other volcanoes at this place centuries before *Copernicus* was formed, some of which can even now be traced; and we are only looking at the very last act of a long drama. Underneath the floor of *Copernicus* were pipes leading directly to the living fires below; and the interior lavas were continually rising and falling in these pipes, seeking for outlets through cracks in the mountain side, along lines of weakness everywhere, even overflowing the rim of the crater at times. When the level of the lava in the interior was high it would overflow the floor of the crater and would soon cool. If another vent was found at a lower level, through a crack in the mountain side, the lava in the pipes would sink and leave the floor unsupported except at its edges where it joined the walls. In time the floor would break off all around the rim and fall, leaving a terrace to mark its former position. A

new rise of lava in the pipes would form a new floor, and this in turn would form a new terrace. Hundreds of these may have been formed, and scores of them may have left no trace; but the terraces we now see are, it seems to me, indubitable proof that this process went on in *Copernicus* al-

lava over the whole floor of the crater and left it comparatively smooth as it now is.

The original negative shows ridges streaming off in all directions from the outer walls of the crater. Some of these have been formed by elevations of the surface by forces from below,

Figure 4.—Plato and the Lunar Alps.

From "The Moon," by Nasmyth & Carpenter. London: John Murray.

most precisely in the same way that it is even now going on in *Kilauea* in the Sandwich Islands.

There have been scores and scores of central mountains formed within the crater (just as at *Kilauea*). Those that we see now are the last ones. They undoubtedly contain volcanic vents, and at the very end of the volcano's history they poured a sheet of

and some of them by lava flowing over the lip of the crater itself, or through cracks in its sides. The bright radiating streaks near *Copernicus* are intimately connected with these ridges. Sometimes the streaks themselves seem to be nothing but very low ridges. In other places they seem to be lava flows which have partially filled up ravines lying between two ridges, or

which have followed the direction of earthquake cracks and fissures, forming dikes.

When one is riding across country in the beautiful island of Hawaii and comes to some region which is not covered by dense tropical forests or by luxuriant sugar plantations, his attention is sure to be directed to one of the wonderful lava flows from the great volcanoes of *Mauna Loa* and *Mauna Kea*. He asks his guide, "What is this?" "Oh, this is the lava flow of 1852." Directly he comes to another river of frozen lava,—"And what is this?" "This is the flow of 1881." And so on till in a few days' journey he has crossed a dozen flows all radiating from the central mountain like rivers, all tending towards the sea, and some of them actually reaching it. Now, in Hawaii, history begins with the advent of the missionaries (1820). The larger part of the island is covered with forest and plantation, and therefore is hidden from sight. The action of wind and rain and air disintegrates the lava into soil with amazing quickness; and yet it is impossible for the traveler not to carry away in his mind a picture—a ground plan—of the island as it really is. Here is the central volcanic focus, and the lavas from its interior have built up the whole island mass. On the top of the older lavas, which are carved into ravines and cañons by erosion, lie the radiating lava streams which go in all directions from the center, and which extend even to the sea (thirty-five to forty-five miles). Here are the earthquake cracks and fissures filled up with later lava flows. Here are long tunnels whose broken-down tops leave marked channels,—streaks. Here are rows of confluent crater-pits of all sizes. Here are larger craters like *Kilauea* with subordinate ones like *Kileaua-iki*. Here are huge cracks in the mountain sides where the pressure of the interior lava has broken through.

I do not think that these bright streaks in the moon are volcanic ashes; for I see no reason why they should lie in radiating streaks as they do, unless all the streaks were in the bottoms of the cañons, which they are not. Again, volcanic ashes should lie in general on the *leeward* side; and I see no evidence that they are not equally distributed. Within the craters are the successive terraces, marking successive levels of the lava flow. The level of the floor of *Kilauea* is to-day more than four hundred feet higher than it was fifty years ago. Some of the older terraces are now submerged, and new ones are in process of formation. Here are the interior cones and mountain masses. In fact every feature which we see in the crater *Copernicus* seems to have its analogue if not its counterpart on this small island of Hawaii.

If I am straining the analogies, I beg the pardon of my confrères, the geologists;—and I am aware that one of the very best observers of lunar topography has stated most emphatically that such an explanation as this will not serve. It, nevertheless, seems to me to be the true one for the region we are considering, while it certainly will not explain other phenomena of a *somewhat* similar character on other parts of the moon. Such analogies will surely strike any astronomer who travels in Hawaii. The only serious question to my mind is in regard to the difference in scale. In Hawaii we have central craters or *calderas* of two and three miles in diameter, and lava-flows from them of forty miles long which would be much longer if they did not end in the sea. On the moon we have the *caldera* of *Copernicus*, which is fifty-six miles in diameter, with lava-flows of four hundred miles or so. Having regard to the immensely greater effect of volcanic forces on the moon (where the force of gravity, for example, is not more than one-sixth of that on the earth), I confess that I see nothing overstrained in drawing the conclusion that in the volcanoes of Hawaii we now have

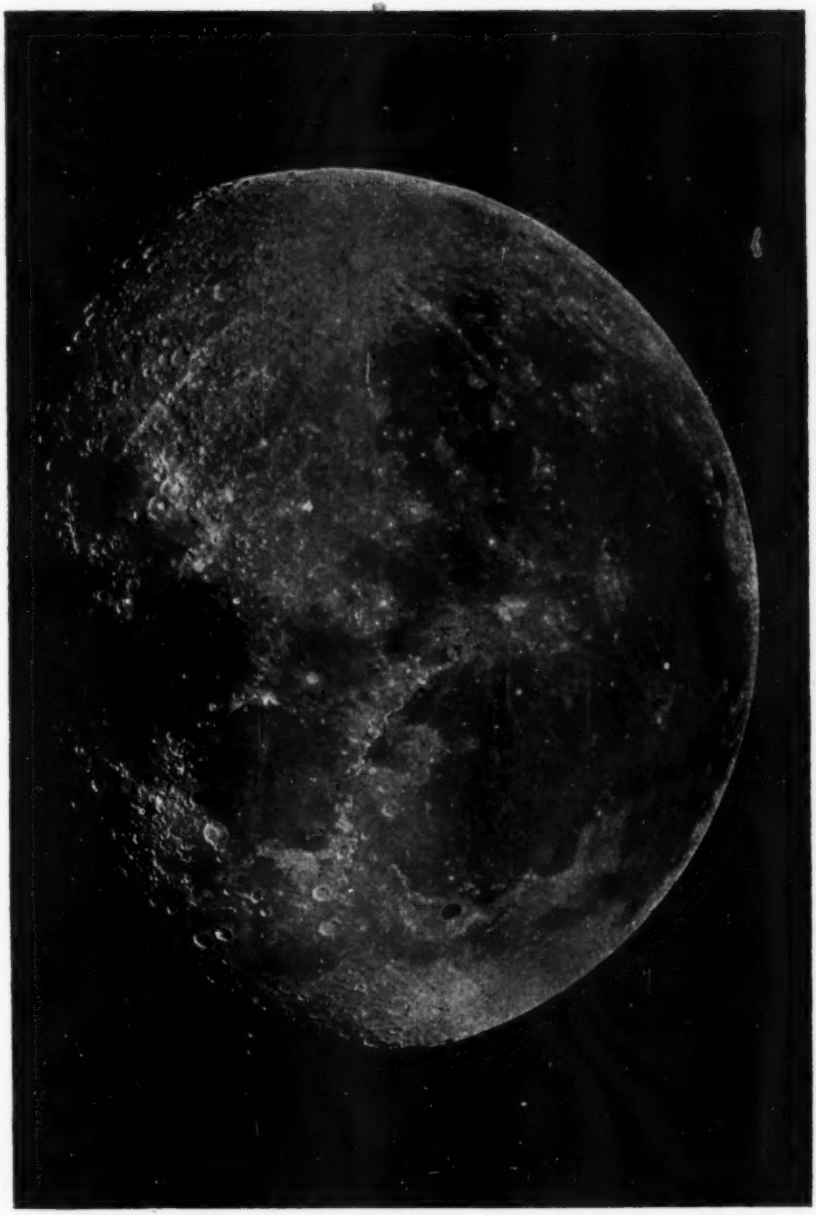


Figure 5.—The Moon.
Photographed August 24, 1888, at Lick Observatory.

before our eyes something like a working model of what *Copernicus* once was.

This, then, is what seems to me to be the key to the landscape shown in our engraving; and it gives a kind of unity to its complex confusion and wild variety. There are other regions on the moon far more difficult to understand; but here, at least, it seems that a kind or order can be made to arise out of the chaos.

YESTERDAY.

By James T. White.

To-day,—ah well!
To-day is fair;
But need I tell
What sweeter air,
Fresh as the morning breath of May,
Blew from the hills of yesterday?

BAVARIA AND THE TYROL.

By E. W. Porter.

TO the Tyrol, Ober-Ammergau and King Ludwig's castles a great tide of English and American travel on the Continent is directed every year. And, shaking off the sad thralldom which cannot be escaped in the earnest village sacred to the *Passion Play*, away rolls the audience of the day before to apotheosize the demi-mortal Ludwig in the splendid palaces which no longer know his godlike presence.

This trip through the Tyrol has a wonderful charm, owing to the picturesque peasant life, the romantic history attached to each spot; and, in the neighborhood of the castles, to the spirit of Ludwig, which seems to haunt hill and glen, and bring before us with ever-increasing vividness the sad incidents of his pathetic yet ludicrous life.

We made the trip on foot, three of us, in short skirts, stout shoes, a bit of luggage strapped to our backs, and no protector save our umbrellas, which served in the several capacities of alpen-stock, defense from rain, sun and brigands, all of which offices, except the last named, they were called upon constantly to fill. We were delighted with our mode of travel, which was, after all, as fast as the post-wagons, we having the advantage of short cuts by pretty mountain trails. We easily made fifteen miles a day, often twenty, and had far better opportunities of seeing the people and of studying the exquisite flora than those who drove along the highways.

The palace of Linderhoff is only seven miles from Ober-Ammergau by the high-road, and only a third of that distance in a direct line across the steep mountains. It is built on a small hill set between darkly wooded mountains, which are in turn overtopped by bare crags and snow-capped peaks. It lies in the midst of this rude nature, a strangely incongruous bit, an exquisitely beautiful creation of art.

As to the interior,—palaces all bear a wearying similarity of lavish display of gold, silver and precious stones. There are a few things here, however, that bear the impress of Ludwig's personality. The chairs are wrought in the shape of thrones, that they may be a constant reminder of his supreme authority. To avoid the presence of attendants, the dining-table is arranged to appear and disappear through an opening in the floor, which is clearly visible by a square cut into the tapestry carpet. Portraits of the imaginary company with whom he conversed while at table beautify the walls and are invariably the wits and beauties of the courts of Louis XIV. and Louis XV. On the floor of the dining-room there is a large rug made of black and white ostrich plumes.

A grotto cut into the hillside and converted, artificially, into a cave hung with stalactites is yet more fairy-like than the palace. Its weird blue light falls upon a mad, rushing waterfall which forms a lake of one-half the cave, and on this lake floats a gilded barge. A magnificent painting representing Tannhauser at the Venus berg is set into the wall on one side of the cave.

One soon grows into sympathy with the deluded monarch, and feels it to be almost a profanation to walk with this stream of curious tourists through the scenes of splendor so long and so sedulously guarded from the eyes of beholders, where so few years ago the lonely monarch lived solitary, haughty and supreme.

A story is told of a renowned opera singer whom Ludwig had summoned to his princely barge. Perceiving the

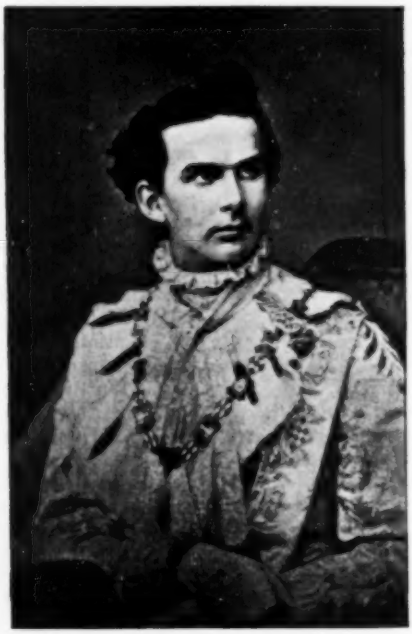
power of her song upon him, she presumed to touch his sacred person. With one majestic sweep of the arm he threw the offender out into the lake, from which she was left to scramble as best she might.

The castle of Neuswanstein lies at some distance from Linderhoff, seven hours fast walking ! It is unique and much more attractive to the palace-wearied tourist, the situation being grander and the castle more imposing than the other. Still it lacks the supernatural effect which accords so well with the character of the self-worshiping king.

The people of Bavaria loved Ludwig, and they love his memory. It is strange, too, for he almost swamped them in debt, and as he always traveled by night they rarely saw his royal person.

These castles, however, have become a source of good revenue, the entrance fee being three marks and the number of visitors countless.

After leaving Hohenswangau there is a rapid succession of villages until you arrive at Innsbruck,— Fussen, Reute, Garmisch, Portenkirchen and Mittenwald,—fascinating old towns,— each having its peculiar historical importance; its ruins testifiying to many battles; its church fantastically frescoed with vivid and impossible saints and Madonnas; its picturesque squalor; and its population of pretty, quaint children, hard-looking women and lazy men.



King Ludwig.

Garmisch and Portenkirchen lie separated by a tiny meadow at the foot of the highest mountain in all Germany, the Zugspitze. Portenkirchen is impressed indelibly on my mind as being the scene of the drama in which two hundred marks belonging to me played the leading rôle. I here had an opportunity of testing the efficiency

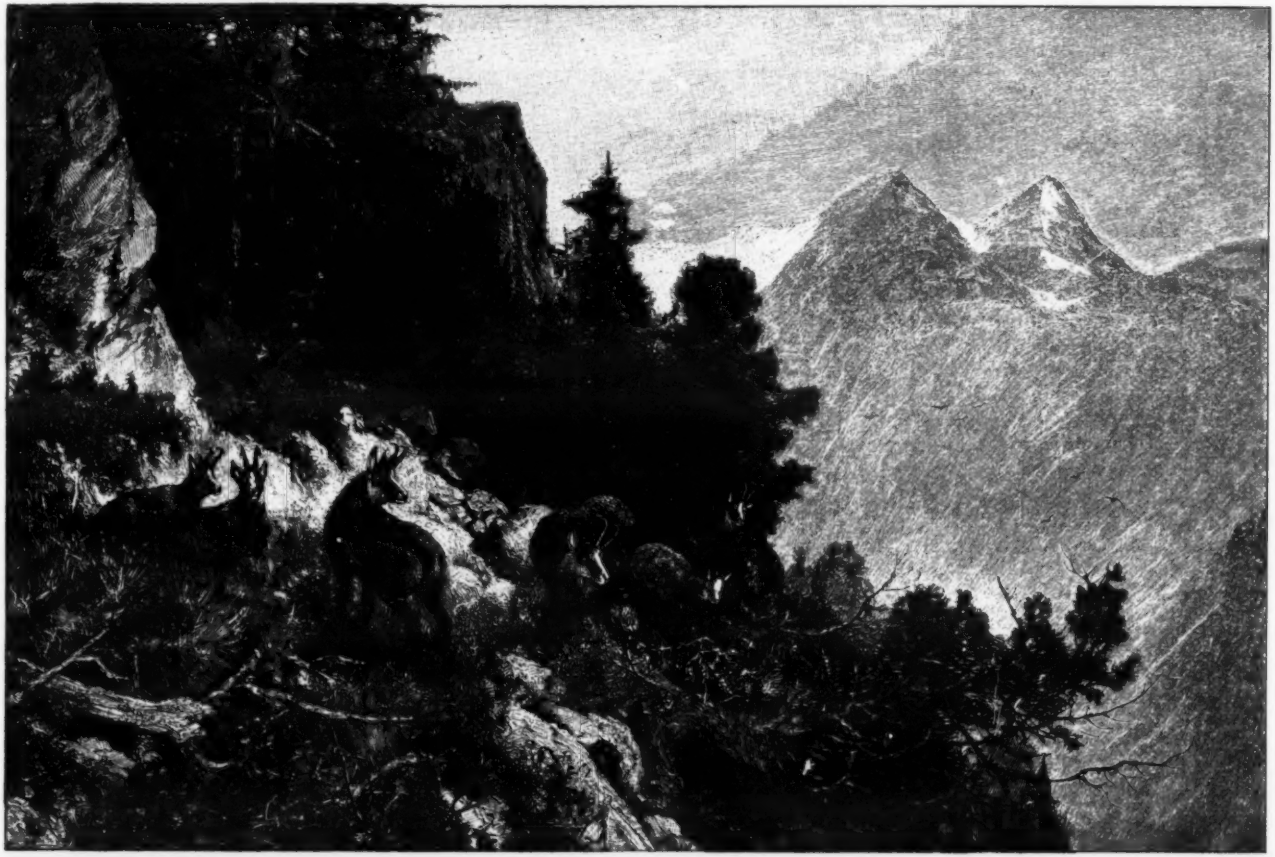
Neuswanstein.

of the south German police. I left the purse on the counter of a shop, and returning immediately to claim it, the girl, who was the only occupant of the place, denied all knowledge of the vanished article. A visit to the chief magistrate was unavailing, so I went to the headquarters of police. I found the young captain drinking beer in the Wirthshaus. He listened with indifference to my story, flirting the meanwhile with the maids, and at length he informed me that he knew the shop-girl and liked her very well and that she could not possibly be guilty. I left the town at once, as I could not subject myself to the torture of witnessing the display of the finery that I knew would be bought with my money. No Tyrolese would serve a countryman in this way, but any advantage that can be taken of an "Englander" seems perfectly legitimate in their eyes.

Garmisch is a popular summer resort for Austrians, Germans and English, and the surrounding mountains are famed as good hunting-grounds. The Prince Regent hunts in these mountains. Lord Wilton has a villa here, where he entertains many notables.

The Tyrolese Wirthshaus is one of the most important features of the country to the pedestrian. The Wirthshaus partakes of the same unvarying uniformity that everything else in the old country bears. One never, by any chance, meets with a progressive Wirth who, for money-making or for any other purpose, has violated the sacred custom of his forefathers by removing an inch from his hospitable walls the offensive cow-shed and the inevitable accumulation of barnyard

Partenkirchen.

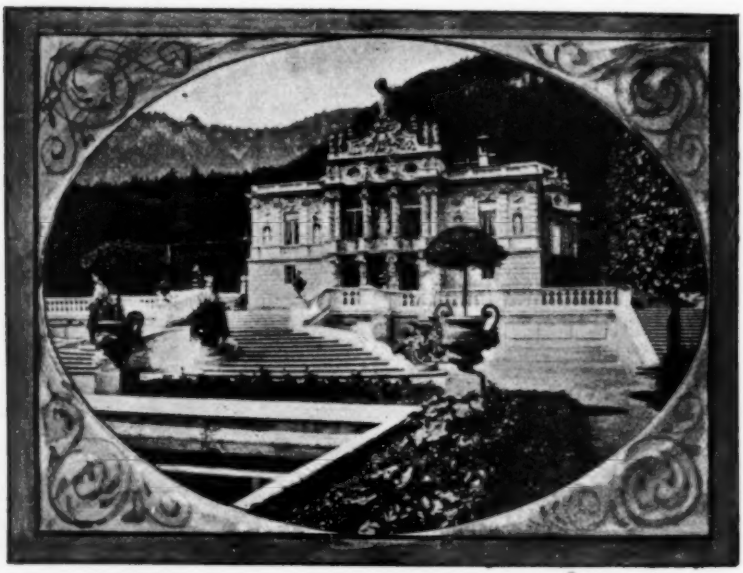


In the Bavarian Alps.

débris. This extension of the kitchen permeates, with anything but an agreeable odor, every nook and cranny of the house. One Wirthshaus can only be distinguished from another by *degrees* of filth.

The Wirth, who in former days was the very soul of the village, the leader of sports in the time of peace, and of her troops in the time of war, has lost the type represented by the brave Hofer, so far as we could discover; if, indeed, we could discover him at all in the crowd of half-drunken, smoke-enveloped men who monopolized the tables in the eating-room. The responsibility of the housekeeping usually falls upon the brisk, pretty maid. In the villages we can have any simple dish prepared at a very moderate cost, but at the wayside inn the maid recites defiantly her menu of black bread, cheese, wine and beer,—quite a wholesome diet, and cheap, costing not more than two cents.

One thing that can be said of the Wirthshaus is that one can always find a clean, comfortable bed there. It is of most simple make, a comfortable mattress covered with one coarse linen sheet, two downy pillows and a feather-bed which, however, is never long enough to cover one's feet, but always has to be supplemented by one of the pillows. One chair and a table is the only furniture of the room besides the bed. The arrangements for face and hand washing are niggardly; and altogether the Wirthshaus is not a place where one would care to spend a summer. But with all the drawbacks of frequent rains, unappetizing food and dirty inns our Tyrol days passed like a dream, and we went on our way bearing blossoms of downy Edelweiss to keep the happy time in mind.



The Palace of Linderhoff.

ALASKAN EXPLORATION IN 1891.

By John Bonner.

THE year 1891 added something to our knowledge of the great territory which constitutes the northwestern corner of the United States,—not as much as might be wished, but still more than any previous year since the Yukon was first surveyed. Three parties in the service of the Government have been in the field; and one volunteer party, under Glave, one of Stanley's lieutenants, has perhaps done more for geographical discovery than all of them. Lieutenant Schwatka has also taken his customary walk through Alaskan wilds, starting from Juneau, striking a confluent of the Yukon to Fort Selkirk, and then pushing across country to the Copper River; his discoveries, if he made any, have not transpired.

Mr. Petroff, the United States Census Agent for Alaska, has added something to our knowledge of the Archipelago off Juneau, and points farther south, and likewise of the Kuskowkin River; and an occasional traveler has contributed his mite. These explorers will enable the geographers of the Hydrographic Bureau to correct some of the errors and supply some of the omissions in their map of 1891; but they still leave a vast area of country, with rivers, lakes and mountains past counting, as dark a mystery as the black forest which Stanley crossed between the Aruwimi and Albert Lake.

The best known of the explorers of 1891 was Professor Israel Russell of the Geological Survey. It was his second visit, his object being twofold,—to solve the mystery of the height of Mount St. Elias, and to determine the geology of the St. Elias Alps. For his field of operations he started in the last week in March, 1891, in a Revenue cutter which had been placed at his disposal, and, at the very outset of his voyage encountered an evil omen which would have induced a pious Roman to turn back.

On June 6th the Revenue cutter hove to at about a mile and a half from the beach of Icy Bay. The sea was smooth, and the breakers apparently not quarrelsome. Captain Healey deemed it safe to try to effect a landing; and he put the Russell party and their stores and supplies in three boats, which pulled to the beach,—the first cutter leading in charge of First Officer Jarvis. In a few minutes the boat was in the breakers, and a huge wave filled her to the gunwale. Jarvis at once ordered his men overboard, bidding them hold on by the boat. The wisdom of this course was soon proved: the next wave landed the whole party, boat and all, on the beach. But when Jarvis turned round he saw the launch, which was under the command of a volunteer, Lieutenant Robinson of the Revenue Marine Service, in the middle of the breakers, and her crew overboard trying to swim to shore. They were all but one caught by the undertow and drowned. Lieut. Robinson's body was recovered that night, and was taken to Sitka for burial. Of all the others save one the sea has not given an account. It was a sad beginning for the expedition; and, as a superstitious person might have predicted, it did not prove a success.

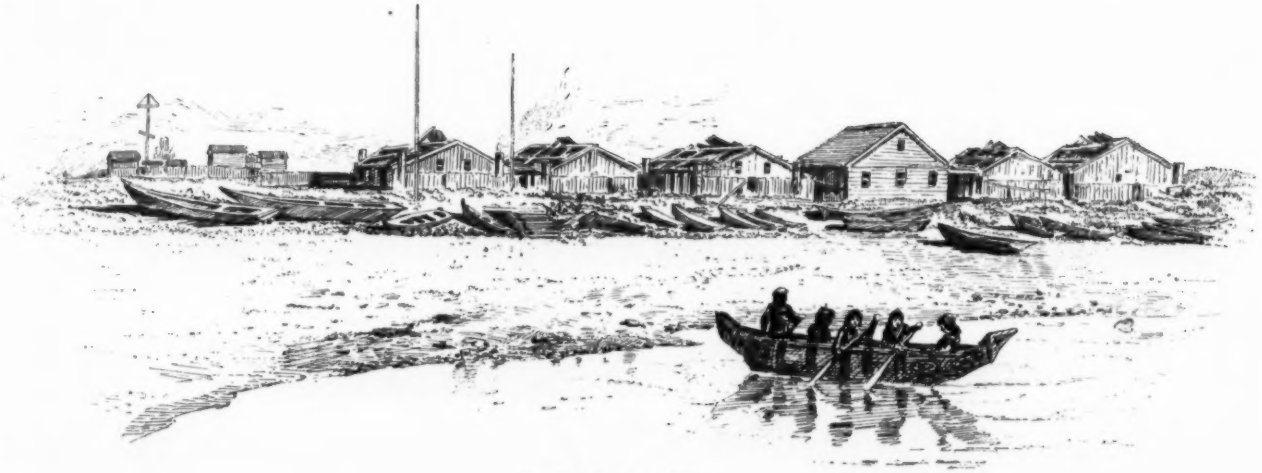
Professor Russell succeeded in ascending Mount St. Elias to an elevation of 14,000 feet above the sea, which is 6,000 feet above the point that was reached by the Schwatka party, but he could get no farther. He was enabled, however, to figure that 5,000 more feet of the mountain remained to be climbed, thus confirming the original estimate of 19,000 feet, which it has been the fashion of late years to deride,

and restoring St. Elias' claim to the distinction of being the highest mountain in North America. If the Professor made any geological discoveries he is reserving them for his report to his bureau. Some curiosity is felt regarding his opinion of the coal which has been found in Yakitat Bay; thus far he has preserved a discreet silence on the subject.

E. T. Glave.

In the mean time another Government party, under the command of Mr. Magrath, had spent a considerable period in exploring the national boundary line, which, as every one knows, follows the meridian of 141 degrees. Magrath started in 1889, and sailed up the Yukon, following that river past Fort Yukon, to the point where it crosses the meridian of 141 degrees, and enters Canadian territory. The point of intersection of the boundary and the river he found to be as nearly as possible in 65 degrees north latitude. Here he established a camp, which he named Camp Davidson, after the distinguished chief of the Coast Survey at San Francisco; and from the camp he ran several survey lines, marking the course of the boundary with the usual monuments. This work accomplished, he descended the Yukon, surveying as he went, until he reached St. Michael's at the mouth of the river, and there took ship for Oonalaska. He did not reach San Francisco till the summer of 1891.

A still more interesting expedition was that which was commanded by Mr. Turner of the Coast and Geodetic

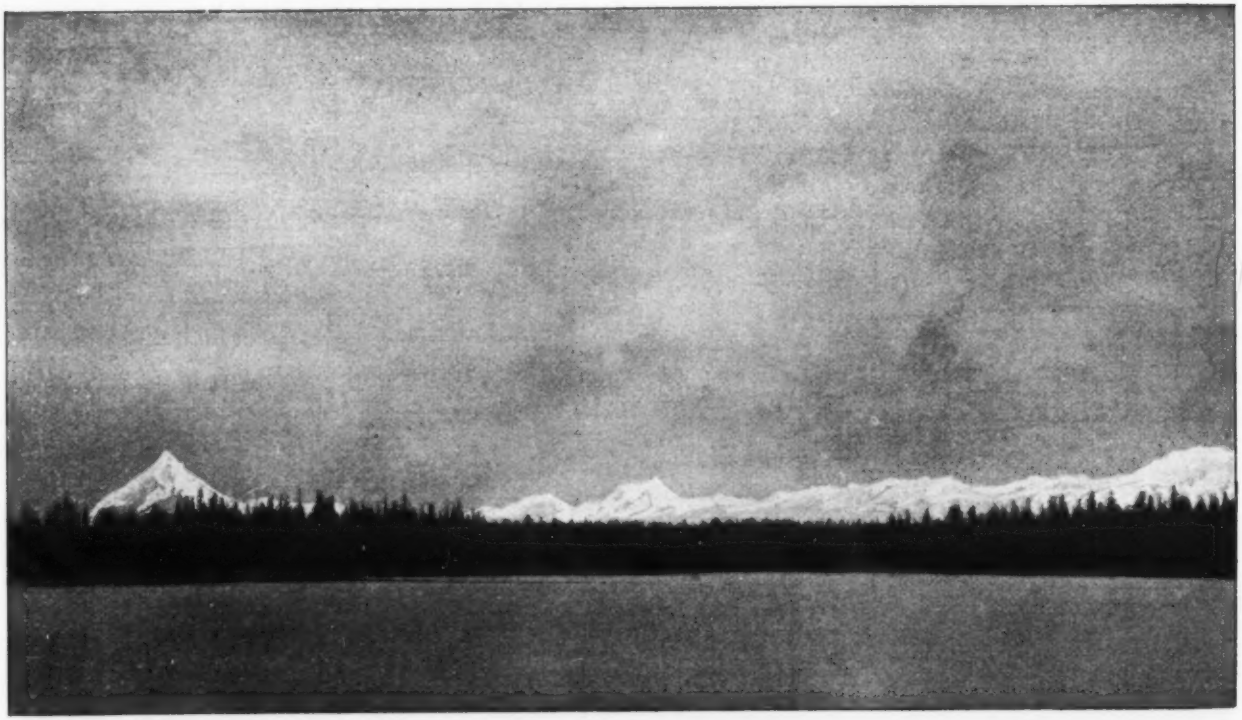


The Rancherie at Sitka.

Survey, and which included among its members an intelligent young astronomer, Mr. Edmonds, now a resident of Chicago. They started in March, 1889, and were conveyed by the Alaska Commercial Company's steamer up the Yukon to within fifty miles from its junction with the Porcupine. Fort Yukon, at the junction, is in about 145 degrees. The journey to 141 degrees, which was their objective, was made on foot. They marched up the bank of the Porcupine River to its intersection with the meridian of 141 degrees; and there, in August, 1889, they pitched a camp at a point about 160 miles north of the spot surveyed by Magrath. To the camp they gave the name of Camp Colonna, after the assistant chief of the Hydrographic Bureau. Here they built a house, accumulated their stores for the winter, and when the weather permitted erected the usual monuments to mark the boundary line.

It was too late to think of returning. Black frost made its appearance by the middle of August; ice was freely formed in the Porcupine by the middle of September; and by the middle of October it was frozen over. The explorers made preparations to spend the winter in scientific work. A box was built for the wet and dry bulb thermometers, and raised on a scaffolding twelve feet above the ground;

Totem Poles at an Alaskan Home.



MOUNT ST. ELIAS. The St. Elias Alps, from a Photograph.

every four hours the temperature was recorded. A magnetic observatory was built, and regular observations taken of the variations of the needle. Finally an astronomical observatory was established, and the telescope was brought into requisition whenever the fog and the aurora borealis rendered it possible to use it to advantage. Work was greatly impeded by the cold. Fires were out of the question in the observatories. Two or three times every night the observers had to jump out of bed, cross a couple of score of feet of snow, and take the temperature, or observe the compass, or adjust the telescope, in an atmosphere 30 degrees, 40 degrees, and even 50 degrees below zero. The instruments were wrapped in chamois leather; but for this precaution their touch would have burned like a red-hot iron. In order to enable the explorers to thaw out after a visit to the observatories a brush fire was kindled near the quarters, and over this they chafed their numbed fingers.

Alaskan Indian (Thlinkit).

As the winter advanced time began to hang heavy on their hands, and they resolved to attempt a journey to the shores of the Arctic Ocean, which they figured to be about 230 miles distant. They had not the remotest idea of the nature of the intervening country; but they were young and intrepid, and they resolved to make the venture. Nothing worse could happen to them than to have to turn back, in case they met with insurmountable obstacles. They mustered a force of ten white men and a few Indians, loaded sledges with provisions, and started on their journey into the unknown land in March, 1890.

They had, as Sherman said of another journey, a most agreeable promenade. The weather was cold, the thermometer sometimes recording 50 degrees below zero. But they were inured to cold, and but for the fog which impeded their vision, and which ultimately prevented their taking observations on the Arctic Ocean, they had nothing to complain of, and in fifteen days they reached their destination. On the trip they made a genuine discovery. That was a range of mountains, from 5,000 to 6,000 feet high, crossing the meridian of 141 degrees at right angles, and extending as far east and west as the eye could reach. The range lies about a hundred miles from the ocean, and is marked on no map. The mountains are densely wooded with pine timber, some of the trees being forty and fifty feet high, and six to eight feet in diameter. It devolved on Mr. Turner, by right of discovery, to christen the range, and he called it the Davidson Mountains, after Professor George Davidson. Some of the smaller feeders of the Porcupine and the Mackenzie probably head in this range.

On the other side of the mountains Mr. Turner and party found a tundra country, such as is encountered in Northern Siberia. They marched day after day over a frozen morass, which never thaws, and is probably frozen three or four feet deep. But the traveling was not bad. They had plenty to eat,—chiefly moose-meat. And they had provided themselves with an abundance of tea, which is the only drink an Arctic traveler cares for. Not a member of the party was ill on

Glave's Horse on Snowshoes.

the trip. It would have been agreeable to linger on the Arctic shore for the purpose of astronomical observation, but in that latitude winter waits for no man, and they had to hurry back to the Porcupine and the Yukon, surveying both streams as they went. On the latter river they were fortunate enough to strike transportation at once, and in September, 1890, they found themselves once more at St. Michael's.

Here a disappointment which might have unmanned less resolute explorers awaited them. The steamer that was to convey them on their homeward journey was gone. The season was

Alaskan Indian Basket and Horn Spoon (Thlinkit).

closing; no other vessel could be expected that fall. For twelve long weary months those young men waited and watched, diverting their leisure by taking observations of sun, moon and stars, and calculating astronomical problems in that most desolate of all desolate countries,—the edge of the Arctic circle in winter.

Ice seas and ice summits! Ice spaces
In splendor of white as God's throne!
Ice worlds to the Pole, and ice places
Untracked and unnamed and unknown!
Hear that boom! Hear the grinding, the groan
Of the ice gods in pain! Hear the moan
Of yon ice mountain hurled
Down this unfinished world!

It was not till September, 1891, that a Revenue cutter hove in sight and relieved them from their boreal prison.

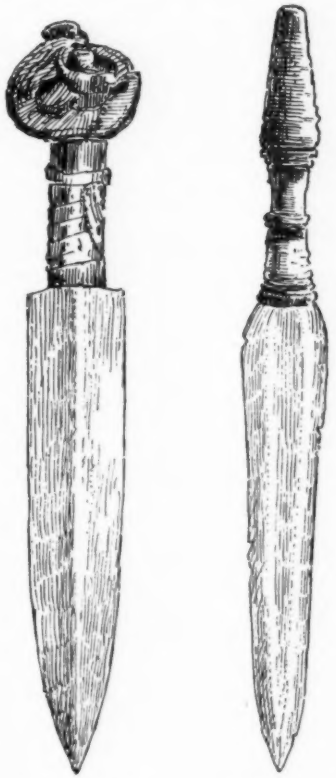
Not less interesting and possibly more useful than Turner's work was the task accomplished by Mr. Glave, who was a veteran explorer, having served under Stanley in Africa. Mr. Glave was second in command of the Wells expedition in 1890, and had formed a pretty shrewd idea of the country and its possibilities.

Thus far, with the exception of the salmon which are canned near the mouths of the rivers, the only productions of Alaska have been the gold found in the placers, and the furs which are collected by Indian hunters. Gold exists in the gravel of nearly all the rivers of the territory, but pay-gold has chiefly been found in the confluents of the upper Yukon, especially in the one known as Forty Mile Creek, and the adjacent streams, and in the Pelly and its affluents. Here coarse gold is found in considerable quantities in the gravel, and a number of miners resort to the washings every year. They are said to clean up with an average of about $2,000 to $3,000 each, which is not bad for a season of from eight to ten weeks. The mines would be more frequented but for the want of transportation. To reach Forty Mile Creek from San Francisco the miner has to cover something like three thousand miles of sea and river travel. He cannot get into Behring Sea without

passing through Unimak Straits, which are in the meridian of 166 degrees, and the journey up the Yukon is frightfully expensive in the company's steamers, and never ending if the miner undertakes to paddle or pole his way up stream in his own or an Indian canoe. The only other road to the mines is by the Indian trail from the head of Lynn Canal over the Chilcat or the Chilcoot pass to the system of lakes in which the Yukon takes its rise, and thence down the Yukon past Fort Selkirk on the mouth of the Pelly to the washings. This is a terrible journey. The range which must be crossed is rarely free from snow, and the Indian guides are capricious, and not always willing to show the way. When they do consent to serve as bearers they charge forty cents per hundred pounds for a six days' trip and even then grumble at carrying much more than their own grub. Gold-hunting must possess rare attractions to command devotees under these circumstances.

The Alaskan miners generally come out by the overland route. After two months of exhausting work they pole their way up the Yukon to the lakes, and carry their food, gun, tools and gold over innumerable portages. At the head of the lakes they take the chances of finding an Indian who will pilot them over one pass or another, and carry part of their load to Chilcoot. It is no wonder that there are so few of them. The same difficulty stands in the way of the fur trade. The valleys of the upper Yukon and its tributaries are full of white, gray and blue foxes, wolves, bears, otters, marten and ermine. The skins of these animals are property; but the Commercial Company owns the only steamers on the Yukon, and no one outside of the company can get the skins out of Alaska for less than their value.

It occurred to Mr. Glave that the problem to be solved for the development of continental Alaska was one of transportation. It was evident that the place of the Indian must be taken by the horse. There was not a horse in the territory, and, so far as was known, there was no forage to feed one, if there had been. Mr. Glave had his own ideas on this point. He bought, at Seattle, four sturdy small horses, weighing about 900 pounds each, and inured to hardship. These



Alaskan War Knife. Chilkâht War Knife.

he conveyed to Chilcoot, and with a partner and a few Indians started on a journey of exploration on his own account. He found, as he had expected, that, at a certain distance from the shore, there were numerous patches of soil abundantly clothed with grass, which was very nutritious. His horses devoured it eagerly, and

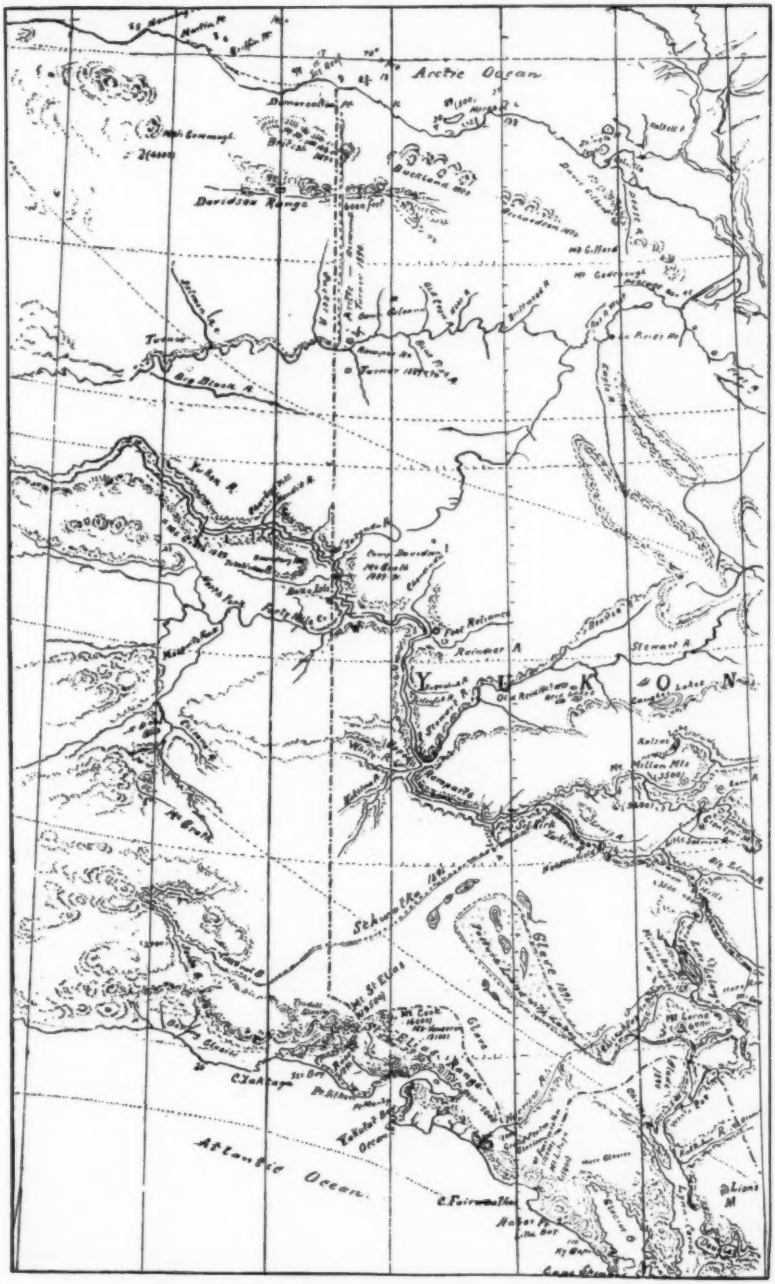
grew fat and frisky. He then commenced a pretty thorough exploration of the country lying back of the St. Elias Alps, and of the slopes of the mountain range which divides the shore from the Yukon watershed. He was independent of the Indian bearers, and was able, with his horses, to cover distances which would have worn out a traveler on foot.

He will probably some day give the world some account of the discoveries he made. Here it may be enough to say that he found the country lying north and northeast of the St. Elias Alps, which is a blank on the maps of the Hydrographic Bureau, supplied with a lake and river system like that of the province of Quebec. Lake opens into lake by a shallow stream, and river flows into river,—the whole emptying at last into the Gulf of Alaska. Not one of these lakes or rivers is marked on any map. Of the range running north of Chilcoot he was unable to make as thorough a survey as he wished. But he satisfied himself that, for purposes of travel and exploration, Chilcoot Pass is to be prefered to Chilcat Pass, which is the one generally traveled by the Indians and miners. He thinks, however, that a more convenient pass than either can yet be found. When it is the problem of transportation is solved. A line of wagon teams starting from Chilcoot village, where there is a salmon cannery and a few houses, following an easy trail to the mountains, crossing the pass, descending on the northern slope, and connecting at some point on Lake Bennett with a line of small steamers to be carried over the pass in sections, would be all that is required. By such a system passengers and goods could be conveyed from San Francisco to the gold washings in something like three weeks; and if the gold is as abundant as the miners say the output of the territory would soon assume serious figures.

Some of Mr. Glave's experiences with his horses were droll. Horses are terribly afraid of bears, and there is quite a liberal supply of bears in Alaska. Nature has provided horses for their protection against the enemy with a remarkably acute scent where bears are concerned. A horse will smell a bear farther than he can see him. When, after the party had made camp, and night had fallen, they were disturbed by frenzied whinnyings from the horses, they knew that a bear was prowling round, and kept a sharp lookout for a chance shot. The horses appeared to recover courage at the appearance of the men. They stopped their cries, and crowded round their human friends, rubbing their noses against them, and surrounding Mr. Glave in particular, as if there were safety in his mere presence.

One of his experiences has certainly never been paralleled. Horses have often been taught to walk on a narrow path where a single false step would be fatal. But he tells us that he taught his horses to walk on snowshoes. They were the ordinary Canadian snowshoes, oval in shape, and rather small. At first, the horses were awkward with them; but after a time they learned the trick of spreading their feet apart, and seemed to understand the purpose of the unusual hoof gear. Readers who live in parts of the country where heavy snowfalls are usual in winter might try whether their horses are susceptible of this branch of education. If they are not, it may perhaps be assumed that this was a case in which desperate straits required desperate remedies, and that the wits of Mr. Glave's horses were sharpened by emergencies.

Mr. Glave does not regard Alaska as a paradise. He did not find moose-meat as abundant as Mr. Turner did farther north. He relied chiefly on bear, and the meat of the hairy mountain sheep which used to be so common in Colorado. He does not seem to have found much trout in the lakes, though they swarm in the lakes of Canada; nor were game-birds abundant, except the ptarmigan, which is generally setting in the season when



Map of Glave's Discoveries and the New Davidson Range.

travelers visit Alaska. Wherever there is a stream it is full of salmon. The unfortunate fish endeavors to spawn as near the heads of the streams as possible, and often gets ashore in shallows and dies. But to mention salmon to an Alaskan is to insult him.

THE CHANNEL OF SANTA BARBARA.

By Juliette Estelle Mathis.

IT lies a liquid opal on the breast
Of soft Pacific seas; heaves when they breathe
With every surging sigh. The thin mists wreathe
Those fair encircling isles that guard with zest
This jewel of the wooing waves' bequest,
From out the depths where tempests rave and seethe,
To happy dwellers on its shores of rest.
Soft smiling skies their benisons bequeathe;
For Peace herself builds here her brooding nest:
Where way-worn pilgrims can at any time
Of their wan woefulness themselves divest,
Escape the summer scorch, the winter rime,
In slumber dream at their own will's behest,
Nor ask of God another perfect clime.

THE PROBLEM OF CHEAP TRANSPORTATION.

By William L. Merry.

THE question of cheap transportation is at this time attracting more attention than any other subject connected with the future of the Pacific Coast; and this may well be the case, since upon the cheap carriage of the products of our soil and industry to the world's markets depends very largely the prosperity of our people.

Railways have accomplished wonders in this direction, considering what was expected of them in years gone by; but this method of transportation has its limitations, even where competition exists. There are still instances in California, and not far distant from San Francisco, where horses and wagons are used for transportation because the work is done at less than charges for the same service by the railway covering practically the same route.

In the economy of modern civilization railways perform an important and necessary function. In the transportation of passengers, mails, specie and valuable perishable property they are indispensable. In a continental country like ours they have become an absolute necessity of our national life in time of peace, and equally so as a means of national defense in time of war. It has been remarked that no railroad manager knows how cheap freight can be carried by steam and rail until he tries it; of course, he would be foolish to try it unless it became necessary to do so.

The State of California has important waterways which are competent to provide for a great part of her internal transportation; but influences and public apathy have permitted these natural highways to become almost worthless in many instances. When the writer arrived in San Francisco in June, 1850, the vessel which brought him around the Cape went to Sacramento city to discharge, sailing up the river. Now, flat-bottom stern-wheel steamers can hardly make their way there during the dry season. The work of deepening and improving these internal waterways rests upon the Government of the Republic; and our people should persistently aim to secure appropriations for this purpose, and then to see that they are judiciously expended. Wherever there is interior water transportation freights are low; every one who has freight to transport is aware of this.

One of the most striking instances of the effect of cheap water transportation is found at the St. Mary's Canal, between Lakes Superior and Huron. The United States Government in 1852 constructed a canal there with one lock. This proving insufficient to meet the demands of commerce, another, and at present the largest lift lock in the world, was built in 1881, under the surpervision of Gen. Weitzel, U. S. Engineers, through which, during the seven months of open water in 1890 (234 days) over nine million tons of shipping were passed, making this the leading artificial waterway in the world, not excepting the Suez Canal.

During the year alluded to this lock was operated every day that the condition of the ice permitted; and the only delay occasioned by accident was a detention of a few hours on one occasion, occurring from the bad management of a vessel passing through. At the St. Mary's Canal forty-two steamers have been seen passed and awaiting passage; and in ten hours all had proceeded on their respective voyages, out of sight. The United States Government is now constructing still another lock with the assured fact of its necessity by the time it can be completed. So far from having proven an injury to the railways in the region alluded to, this cheap waterway has so developed

the industries of that portion of the lake region that more railroads have been constucted to accommodate the increasing land traffic and population; while it is a fact that thousands of tons of ore which have been passed through this canal for reduction at points south of the lakes would to-day remain undisturbed in their native beds but for the cheap transportation afforded by this water route. Railways would have been incompetent to deal with the problem of cost which controlled the question of mining and transportation of these ore bodies.

Leaving the question of internal transportation, we may consider the question of ocean carriage where it competes with railways. The following statement of comparative cost was furnished me by that eminent Civil Engineer, William J. McAlpine, an unquestioned authority on the subject.

COST OF TRANSPORTATION PER TON PER MILE, EXCLUSIVE OF INTERST ON CAPITAL.

1. Ocean, long voyages.. . .	1	mill
2. Shorter, or voyages of medium length	1½	"
3. Short coasting voyages . .	2	"
4. Canals (excluding ship-canals) . . . . . Each lock is equal to one mile additional canal.	4	"
5. Smaller canals with greater lockage	6	"
6. Railways with favoring grades, loads in direction of descending grades in excess of loads ascending	8	"
7. Railways, heavy grades and unfavorable tonnage, movement preponderating in one direction . . .	15	"
8. Railways of usual grades and average freight movement each way.	10	"

Since the above table was formulated the adoption of triple-expansion engines and other improvements have still further increased the disparity between the cost of transportation by land and sea. There has been improvement also in the manufacture of locomotives, but apparently not to the extent developed in the latest marine engines. The freight steamship *Cufic* makes the trip across the Atlantic in from ten and a half to eleven days, with 6,100 tons freight, on a coal consumption of about thirty-three tons daily. In ships of this character the discrepancy alluded to is much greater than above set forth in favor of water transportation. The new steamship *Nomadic* of the same line carries 6,800 tons freight, with still greater economy, although no precise statistics are at hand as to her performance. It is safe to assert that no sailing ship can compete with this showing on trans-Atlantic voyages, and it is questionable if they can do so even on long ocean voyages.

As an illustration of number six, on the Reading Coal Railroad the same engine exerts the same power to haul a train of one hundred loaded cars to market that it does to haul back the empty cars.

The above statement proves the fact known to all experts on the subject, that the expense of freight carriage on long ocean voyages compares with railway service in the ratio of one to ten; while, for practical purposes, assuming the cost of short voyages, the average carriage by water compares in cost with railway transportation in the ratio of one to five, or one to six. Consequently to water-carriage, internal and by sea, we must look for cheap transportation, independent of other limitations on railway carriage, easily recognized.

The modern improvements on marine engines, applied to iron vessels, enable them to compete with vessels propelled by sail alone, especially on short voyages, under ordinary conditions, the steamship being able to make at moderate speed about three voyages to one of the sailing ship in the same time, over the same route. It will be seen consequently that sailing ships have the best conditions for competing with steam on voyages of

great length,—for instance, around Cape Horn and the Cape of Good Hope in various directions. This is the last hold of sailing ships in competition with steam upon the great oceans, and even this is being successfully contested. It may be further remarked that the comparison of railway with water transportation already made, being exclusive of interest on capital, the railway is further at a great comparative disadvantage since the ocean highway needs no expense for maintenance. It is free to all, and the expense of improving internal waterways is borne by the people at large, through their Government.

What has been already written will illustrate why the people of the Pacific Coast of the Republic have always taken a deep interest in the interoceanic canal. While the construction of the Panama Canal was being attempted, there was an ardent hope for its early completion among our people, and when that hope was defeated by failure there, it is natural that the American Maritime Canal through Nicaragua should receive public attention and support, especially as its simplicity of construction and its practicability at a cost that will tax commerce lightly have been abundantly demonstrated.

Aside from this feeling there is among intelligent Americans familiar with the subject a deep-seated conviction that no foreign power should be permitted to control this great interoceanic waterway, which has been properly called by one of our great statesmen *a continuation of the coast line of the United States.* This is based largely on the fact that our greatest commercial competitor now controls the interoceanic highway leading to the Orient, and has already closed it to the commerce of the world when it suited her convenience, and would doubtless do so at Nicaragua under like conditions if that still more important waterway is permitted to be placed under her financial or political control.

As an illustration of the importance of the Nicaragua Canal to the commerce of the world the following table of distances will be of interest to the reader:

Table Showing Distances in Miles Between Commercial Ports of the World and Distances Saved by the Nicaragua Canal:

FROM	Via Cape Horn. Miles.	Via Cape of Good Hope. Miles.	Via Nicaragua Canal. Miles.	Distance Saved in Miles.
New York to San Francisco,	14,840		4,946	9,894
" " Behring Strait,	17,921		8,026	9,895
" " Sitka,	16,105		6,209	9,896
" " Acapulco,	13,071		3,122	9,949
" " Mazatlan,	13,631		3,682	9,949
" " Hong Kong,	18,180	15,201	11,038	4,163
" " Yokohama,	17,679	16,190	9,363	6,827
" " Melbourne,	13,502	13,290	10,000	3,290
" " New Zealand,	12,550	14,125	8,680	3,870
" " Sandwich Isl'ds,	14,730		6,388	7,842
" " Callao,	10,689		3,701	6,988
" " Guayaquil,	11,471		3,053	8,418
" " Valparaiso,	9,750		4,688	5,062
New Orleans to San Fr'ncisco	15,052		4,047	11,005
" " Acapulco,	13,283		2,409	10,874
" " Mazatlan,	13,843		2,969	10,874
" " Guayaquil,	11,683		2,310	9,343
" " Callao,	10,901		2,988	7,913
" " Valparaiso,	9,962		3,987	5,975
Liverpool to San Francisco,	14,690		7,694	6,936
" " Acapulco,	12,921		5,870	7,051
" " Mazatlan,	13,481		6,430	7,051
" " Melbourne,	13,352	13,140	12,748	392
" " New Zealand,	12,400	13,975	11,349	1,051
" " Hong Kong,	18,030	15,051	13,786	1,265
" " Yokohama,	17,529	15,040	12,111	3,929
" " Guayaquil,	11,321		5,890	5,431
" " Callao,	10,539		6,449	4,090
" " Valparaiso,	9,600		7,436	2,144
" " Sandwich Isl'ds,	14,080		9,136	4,944
Spain to Manilla,	16,900	13,951	13,520	431
France to Tonquin,	17,750	15,201	13,887	1,314
Hamburg to Mazatlan,	13,931		6,880	7,051
" " Acapulco,	13,371		6,320	7,051
" " Fonseca,	11,430		5,530	5,900
" " Punta Arenas, Costa Rica,	11,120		5,515	5,605

	Miles.
NEW YORK to East. Ent. of Nicaragua Canal,	2,021
LIVERPOOL " " " "	4,769
HAMBURG " " " "	5,219
AMSTERDAM " " " "	4,994
HAVRE " " " "	4,874
CADIZ " " " "	4,220
NEW ORLEANS " " " "	1,308
SAN FR'NCISCO to West Ent. of Nicaragua Canal,	2,776
VALPARAISO " " " "	2,518
CALLAO " " " "	1,531
PORTLAND " " " "	3,219
VICTORIA " " " "	3,428

NOTE.—The distances have been measured by customary routes most convenient for sailing ships and slow freight steamers.

It will be noted that the distance saved between San Francisco and New York is nearly equal to one-half the

earth's circumference at the equator. It will also be evident that the distances saved are considerably greater than the saving made by the Suez Canal, and also greater than any canal that can be hereafter built. It is hard to conceive the result of the opening of the great ocean highway upon the development of this Pacific Coast. Its commerce, agriculture, horticulture and its general welfare will surprise the student of contemporaneous history, when the limitation of present conditions imposed upon our people is forever removed. As compared with cost of transportation by rail on the ratio already alluded to, New York will be within six hundred miles railroad distance, and Chicago within four hundred miles! The railway systems, as in the case of the St. Mary's Canal, will be greatly benefited by the development of the Pacific Coast, resulting from cheap transportation for the products of our soil. Immigration will come to us without invitation, and production will no longer be handicapped by expensive freight. We shall no longer hear of thousands of acres of potatoes being allowed to rot because it does not pay to dig and market them, while the people of Europe are starving for the food of which we have a superabundance.

Cheap transportation is one of the problems of the age throughout the civilized world; but on the Pacific Coast it is the great problem which must be solved, a problem which presses upon our people for solution more and more as the years roll by. We are on the very outposts of the world's commerce. Westward stretches the greatest ocean on the globe; eastward our country spans the continent, with our centers of population over three thousand miles distant by rail.

Within a radius of thirty miles from the city hall of the city of New York—within this sixty-mile circle extending partly into the Atlantic Ocean—we find one out of fourteen of every soul in the United States! The same illustration, in a lesser degree, applies to all our large cities on the Atlantic Coast. They are the centers of consumption, and the great home markets we must reach or continue to suffer an arrested development.

Across the Atlantic are the nations of our own race, needing the products of our soil and industry; and we must "railroad it" over three thousand miles, and then cross the Atlantic to reach them!

All this will be changed when the canal is completed. New Orleans by sea in ten days, New York in eighteen days and Liverpool in twenty-five days easy steaming, at one quarter to three eights of a cent per pound,—that is what the Nicaragua Canal means to our people! Is it a wonder that they are urgent for its completion? In the movement of freight the general reader will underestimate the disadvantage of breaking bulk. While the cost has been somewhat reduced by modern appliances, yet the delay and damage to merchandise cannot be avoided. Nothing has so decreased the value of the Panama Isthmus route, as a competitor in handling freight, as breaking bulk and rehandling cargo in Colon, and twice at Panama. Our merchants have always regarded this as a great objection to the use of that route for freight. It is one of the great advantages of ocean transportation that breaking bulk is unnecessary until the voyage has been completed.

It has been the aim of railway companies to avoid this as much as possible by adopting a standard gauge, and interchanging cars; but on long lines of railway transportation it is not easy of accomplishment. If ever accomplished the baggage-smasher will find his occupation reduced to a happy minimum! There has been recently on this Coast considerable discussion of transportation via the Straits of Magellan to Atlantic ports by steam. There is merit in this proposition with modern freight steamers. If economically managed they will be profitable, on the basis of through freight alone, while the local

business of the way ports will largely increase the receipts of the line; and, if built as well as operated in San Francisco, the enterprise would be of great service to our city and State. Unfortunately, the excessive taxation of shipping under our State Constitution would necessitate the registry in some other State more friendly to the shipping interest.

When these steamships can be passed through the interoceanic canal the full solution of the question will have been attained; and this is a feature of the question which may be considered very favorable to the experiment. Even perishable freights, the products of our orchards and farms, can be successfully and cheaply carried by this route on refrigerator steamers, as is now and has for years been done with fresh meats from the Argentine Republic, Australia and New Zealand to Europe. The requirements of this class of service for vegetable products are much less rigorous than for meats, the latter requiring from ten to twelve degrees Fahrenheit lower temperature than fruit and vegetables. The cheapness of transportation by water is well illustrated by the demand in various parts of the world for ship canals. Manchester demands and is completing one at a cost of about $46,000,000, one-half of what the Nicaragua Canal will cost! Paris demands deep water at her doors. A ship canal is being built from the North Sea, and another at the Isthmus of Corinth, and others of less importance are projected. These are trivial in importance with the maritime canal of Nicaragua, which avoids the circumnavigation of half a continent, and discards the most tempestuous navigation on the globe!

The ocean is God's great highway,—nature's cheap transportation route,—an abundance of water but no watered stocks, no tracks to maintain, no switches to be left open,—its use free to all on equal terms!

Three-fifths of the globe is covered with navigable waters, affording a basis of cheap transportation, inviting the energy and the skill of mankind. The greatest nations have been and to-day are those that have used water transportation the most. Navigation has opened the path to empire!

The depth of water at the principal ports of the world has limited the size of ships, and the limit appears to have been reached. It is a striking fact that a ship drawing twenty-four feet of water is too large for three-quarters of the harbors in the world. The trans-Atlantic steamships have to await high water before passing the bar at Sandy Hook, and the San Francisco bar has spots on it with only thirty feet depth, on which deeply laden ships have struck repeatedly. While this limit exists as to size there is no known limit to propulsion. It does appear as if not much more can be expected from the use of steam, except possibly as a secondary power to produce electricity for the propelling of ships. In the development of electricity we may look for a motive power applicable to ocean navigation. Electric ships are almost a certainty of the near future. Electric launches are now at work afloat, and one of the large flour mills at Minneapolis has just introduced electricity as its motive power. Under any circumstances that can be foreseen, however, water transportation will continue to be the cheapest known to commerce; and in the development of maritime commerce San Francisco must make its mark in the history of modern cities; while the Pacific Coast of the United States will welcome the day when an American interoceanic canal opens a cheap transportation route to Europe and our Atlantic coast. Without injury to existing transportation interests, it will mark a new era in our prosperity,—a monument to American enterprise and a benison to mankind. Welcome the day! It cannot come too soon. The American flag shall go afloat once more, and San Francisco shall become one of the world's greatest seaports,—a distributing point for the commerce of the Pacific Ocean.

THOSE BELLS OF THE MATER PURISSIMA.

By Evelyn Morse Ludlum.

CAPTAIN SIMON MATTHEWS did sometimes quote the Bible, but always in a slighting, colloquial phrase, and merely to suit his private purposes.

For instance, "that there apple business" was thrown at Josefa, his granddaughter, as an unanswerable reason why she should not be given the liberty of his orchard.

To irrigate, to spray, to anoint, to fumigate his few trees was the anxious delight of his life. He accounted for his enthusiasm over some fine persimmons in words that might easily have had a human application.

"I've watched that there fruit," he'd say, "pickin' its way along from a bud."

Josefa, too, or "Chepa," as she was nicknamed, had been "picking her way along" under his eyes.

She had pretty, caressing tricks, would lay her soft, round cheek down upon her grandfather's arm. But children do not choose convenient times. Old Matthews' attention was absorbed by a thousand trifles. If he was busy, the arm Chepa pressed remained as irresponsive as a bone under its flapping gingham sleeve.

Chepa had a feeling that her grandfather locked her out of his heart with the same key clicking so sharply in the padlock of his orchard-gate.

Indoors there was always her Aunt Porfirio, a representative of the Mexican element of Pueblo Viejo, where Matthews had been settled these thirty years.

The Señora secretly called the Captain "that robber." Had he not been ready to snap up a bit of property whenever her improvident countrymen were forced to sell?

With a man's dullness the Captain had never discovered this domestic enemy, or how Chepa's life was embittered by her.

She hated Chepa as the heiress of half the pueblo.

When Chepa's last and dearest playmate, Pablo McNamara, left the dead town to seek a livelihood elsewhere the girl would have run away from home; but, profoundly ignorant as she was, a vague terror always accompanied her speculations upon such a course.

At sixteen she had touches of beauty about her fit to dream upon: a rich sculpture of the lips, a dewy fire deep in her dark eyes, a glint of ravishing color where her somber hair ridged itself to the su[illegible].

But she pondered too deeply about herself. There was much in her lonely habits to draw her to forsaken places. Such a place was one of the many ruins in Pueblo Viejo. "Mercedes' house" it was called, after a bride killed there by the falling of a tile through a weak place in the thatch.

The dwelling with all it contained had been superstitiously abandoned. Such rooms as were open had been robbed by Indians; but the death-chamber at one end of the row, hermetically sealed by the weight of the sinking roof, remained untouched.

A foot path leading from the *placita* to the little Catholic chapel on the outskirts of the town would have been shortened by going past Mercedes' house, but curved off widely instead.

A thicket of castor-bean and wild tobacco grew rankly around it. Chepa could be sure of solitude there.

One afternoon she fled to Mercedes' house in bitter revolt. She gave vent to her feelings with childish abandon by tearing at the braids of her hair, into which black strings had been tightly woven,—a hideous Mexican fashion.

She flung the string on the floor. Her two braids divided into six deeply waving strands; she attacked each strand, whipping it about. Her thoughts went even faster than her fingers.

"My grandfather will do what he pleases with his own," she declared, addressing her aunt, Luise Porfirio in imagination. "You cannot stop him."

Her loose locks spread gradually into a rich mass. She flung them around until her head swam and an electric life awoke in each airy filament.

The sunshine pouring down through the broken roof of the room where she sat took this magnificent mist of hair to itself, setting it afire.

Chepa was diverted from one cause of anger to another.

"Is this Indian hair?" she asked, in a transport of scorn and delight.

For the Señora Porfirio had not kept from her the ugly old rumor that her grandfather's first wife, her veritable grandmother, had been, not a Mexican woman, but an Indian squaw.

Little birds, accustomed to make free with Mercedes' house, could not wait for the disappearance of that glorified apparition.

Sitting silent on a rubbish-heap fallen in from the roof, Chepa felt a bird drop lightly down beside her.

She welcomed her visitor with a half hiss, half whistle, a charm she had learned from a Cahuilla Indian girl.

With a hop the bird took the edge of a tile-shard nearer to that mysterious summons. He twisted his head with insatiable curiosity.

As the hissing whistle went on inquisitive twitterings fell from ragged fringes of thatch overhead; excited shadows winked across the sunshine; bird after bird slipped down the golden chute and alighted.

In the midst of this growing flock Chepa was cautiously gathering up the hem of her gown so as to make a deep bag.

Whistle, whistle. A knot of snake-grass, stirred by heaven knows what, for nothing else was stirring, rustled with sound of life trailing by; but not a bird took fright. Whistle, whistle. A wild tobacco-tree whose top, dipping slenderly over the wall, dipped deep into the sunstream, sprang up suddenly, riding some flaw, and sprinkled Chepa and her entranced observers with sundrops. Whistle, whistle. Swiftly Chepa's free hand darted out to catch a bird, and returning, whish it into her improvised bag.

The other birds flew wildly away, but Chepa knew how to lure them back until her game-pouch was as full as she cared to have it.

What did she mean to do? Without doubt the Cahuilla girl had kept her captives for the spit.

Chepa stood up, gathering the skirt of her gown closer and closer. She talked to her prisoners aloud:

"You will never, never fly again, no?"

An ever-recurring "No?" from the Spanish tongue was shaded to infinite meanings on Chepa's lips, was deferential, gracious, wistful, from mood to mood.

"Only your feathers will fly when I pick them. One by one they will fly away to the top of the trees, away high up to the sun."

The imprisoned birds chirped frantically. Chepa was thrilled by the feel of their tiny feet kicking and scratching.

"But you will be dead, dead, dead."

With this dire repetition she gave the tumbling, palpitating mass an ecstatic squeeze,—and let her gown fall.

The birds rolled downward as one, but only far enough to catch their wings and whirr! they were slanting madly up the sunbeam, up, up, as if not to stop short of the sky. Chepa's very heart rose with them. She stretched up her arms as if to share in their glorious liberation.

Her rebellious mood had given way to an ecstasy of hope.

This hope had some foundation. A corporation of medical specialists were bargaining for a thousand acres of her

grandfather's land. They were to build a sanitarium for consumptives, to plant gardens and orchards in which patients might work out their own cure.

The Captain thought it a magnificent scheme. He had gone into it heart and soul, raising his price enthusiastically from day to day. He talked to Chepa incessantly, with flashes of youth in his weak, old eyes, of what he would do with changing, yet always fabulous, sums of money.

The birds were gone. Chepa sat down once more on the rubbish-heap in the midst of her red-gold bush of hair.

A dream of the future glittered and spun like the sunshine, adorably pure, laden with balm and ozone which men were coming to buy with her grandfather's land.

Out of this dream of the future, advancing to meet the self she was to be, came her lost playmate, Pablo McNamara.

He turned adoring eyes upon her.

"You are beautiful," he seemed to say, "and I love you."

A sound, not human, broke upon her ears with startling nearness. Just one thrilling note, and at an ominous interval another.

The bells of the Mater Purissima had begun to toll.

Ineffably clear, and right at hand, yet those tones had a singular sound of remoteness. No material interposition produced this effect. It was a spiritual quality, an aloofness, in touch with the dead pueblo, with its summer-burned hills and the seeping away of life.

Those vibrations as they widened out toward infinity took Chepa's soul with them. Her dream of the future passed into them as a breath passes into a wide-winged wind, and is lost.

She rose quickly and went to look through the great blossom-brushes of the castor-bean with an instinctive effort to lay hold upon some object that would bring back the present to her senses, bring back her hopes for the future.

Beyond the thicket, across a sun-baked open space, stood the little chapel. As through a mist she saw its side door standing open, its dark interior showing as a niche of shadow.

Rude figures which the sunshine could not enliven were crowding out of this shadow. One of them bore a tiny box decorated with gay tatters of cloth and paper.

"It is only an Indian baby," Chepa said, in a daze.

Behind the chapel rose up austerely the bare posts and cross-beam where the bells hung, or, as now, rolled languidly against the blue of the deep sky.

Seen through these posts as in a frame, immeasurable perspectives of wild land merged in the sapphire uplift of False Bay.

Upon this vacant water the afternoon was passing in flights of golden arrows.

Would those bells never cease! The priest who, only, had the right to ring them was tying back their consecrated tongues.

But whenever Chepa awoke that night their vibrations seemed to be still widening outward from her brain.

Chepa's heart was full of delirious expectations. The hours that separated her from a new life of travel and luxury, such as her grandfather had garrulously pictured, were on their way. At noon sharp, that very day, the great land deal was to be consummated.

At ten o'clock, giving up an attempt to spend the morning, as usual, in his orchard, the Captain had dressed himself with distinct reference to his dignity as a man of means.

The tails of his gingham shirt, wont to flow free, were tucked in. His hair, ordinarily left to draggle in gray wisps over his shoulders, was drawn up and spread painstakingly thin to conceal an extensive baldness. A strong musty odor exhaled from a brand new silk handkerchief knotted about his throat.

Chepa, on tiptoe with exultation, announced to him constantly how many

more teams and horses were hitching in the *placita*.

He remarked with an air of pride:

"They've heerd of this big 'buy' all over the country."

The Señor Porfirio, who had taken the Captain's side against Luisa Porfirio and other mossback opponents of the sale, dawdled uneasily back and forth between his open door and the Captain's.

"You might spring an advance of five thousand on them," he advised at the last minute. "They would not let their scheme fall through for five thousand."

"Think ye? Think ye?" demanded the Captain, grouping and regrouping his wrinkles to the expression of varying shades of cupidity.

With the suddenness that surprises us in things long waited for, the great interview was actually taking place.

Chepa had fled to an adjoining room to listen. Her head and heart throbbed together with joy,—then terror.

Was that her grandfather's voice breaking out furiously?

"Who's made ye a better offer? . . . . Porfirio? He hasn't a acre in his own right. . . . . Forty dollars a acre? . . . . Take him up then, and when your improvements are in see if there ain't a right o' dower or trust deed, some d——d Mexican trickery, trumped up to drag ye into litigation?"

If Señor Porfirio had spoiled Captain Matthews' sale the Captain looked to a prompt return of the attention.

Those eminent specialists went elsewhere, leaving Pueblo Viejo to its old ways.

After such a terrible disappointment Chepa found the deadly monotony of things indoors unendurable.

A golden perch swimming in circles bounded by a glass bottle startled so stupidly at nothing. The round wooden clock on a bare wooden shelf was perpetually rolling over on its head and ticking placidly upside down. When Chepa was half mad with drawing threads from endless strips of *perfilada*, her aunt's favorite species of Spanish lace, she ran desperately to her grandfather.

She found him talking aloud to himself as he stooped over a pepper-vine.

She laid her cheek, pale with thoughts, upon the arm he needed to have free.

"What's the matter of ye anyhow!" he shouted.

She had startled him when he was deeply preoccupied.

"Let go, there! Eh, eh?"

Chepa had said something in a low tone which he could not hear.

He jerked his face up at her and instantly, in the intensity of a peevish inquiry, drew his toothless lips apart.

What has an old man of eighty to do with storms of feeling?

In the Captain's agitation he pulled off a green pepper and stood up fumbling at it and blinking his weak old eyes at Chepa.

"What's on ye Chepy?"

She tried to speak, but could only draw her breath hard.

The Captain's discomfort pushed him to seek relief in a general accusation.

"Weemen are al'ays hankerin' for somethin'"

"Grandfather," said Chepa with a deep, still gaze upon him, and a childish quiver of her lip, "could not a girl like me be a religious, a nun? Is it not good, no?"

How had the Captain's life prepared him to answer such a query?

"Who's been a talkin' to ye?"

"Nobody—sure, no. I think of it myself."

"I've got along all my life—and I ain't goin' to begin givin' in to such notions. You're your grandmother all over."

With the green pepper still in his hand he had disemboweled it and ate the carcass with a furious churning of the jaws. His eyes were redder than usual from the burning.

"But when she got one o' her spells o' hankerin' on I jest upped and off fer a week's huntin'. When I got

back she was pretty generally ready to take things as they come."

"Grandfather," said Chepa, looking at him as never before, with eyes that summoned him before the judgment-bar of a soul, "I have often thought to myself I would ask you, Is that story true that I hear? Was my grandmother an Indian?"

Her lip quivered, not childishly now, as she waited.

"Is it true, grandfather?"

He anwered her sharply, "You're a fool!" and turned his back on her.

As Chepa was going vaguely out of the garden she saw Pablo McNamara whirling away from the town in a jaunty dog-cart.

Dead grasses flickered ghost-like in the *placita*. The sunshine absorbed there by dark walls lay dimly as in an eclipse.

At a curbless well, covered by a lid let into the street like a trap-door, a superannuated horse was waiting for some one to give him a drink. He blew his nostrils at Chepa and pawed at the wooden lid.

She drew water and gave him to drink.

The chapel door was standing open upon the eternal shadow of its interior. A priest praying alone before the altar did not look up while Chepa stood about.

Behind the chapel those bells seemed to be forever waiting for youth to be dead and borne to its burial.

A second time that strange seizure! Staring up somberly at the bells, Chepa found the present with its despair trembling outward from her soul to possess that vacant landscape, the world, eternity itself, in ripples of solemn sound.

* * * *

A strange event had quickened Pueblo Viejo into galvanic semblance of life.

Chepa Matthews' sudden disappearance was associated with Pablo McNamara's equally sudden departure from that section of the country.

But Captain Matthews charged furiously upon all gossips with another theory. His "little Chepy" had been "inveigled away" from him by priests who wanted his land.

An Indian boy stoning birds near Mercedes' house heard a strange sound in there.

The house had always been haunted. It was long before men were led to search it.

A heap of stones and tiles rudely simulating a flight of steps led from the earthen floor up to the roof of Mercedes' death-chamber.

Looking through the ruinous thatch into the cell-like gloom below a sight to chill the blood was seen.

Rooted amid dust and cobwebs, her wild hair in a sunless mist, stood what had been Chepa Matthews. Her arms hung rigidly down in front of her; the hands, locked together, made one fist.

At odd moments, far apart, moved by some blind mechanism, her arms lifted toward her breast, the fist smote there, and a voice not hers, but hollow and vibrant, answered the stroke as a bell its clapper. One lamentable great tone, and at ominous intervals another and another:

"Oh-h! Oh-h! Oh-h!"

Then marble silence again. Devout Catholics saw how this affliction had come about.

Had not that robber of a Captain just "floated a claim" over the land on which the chapel stood?

To punish this heretic, those blessed bells had "gone to Chepa Matthews' brain."

Solemn groups stand for hours at safe distances from Mercedes' house to hear and shudder at those lamentable great tones.

"Oh-h! Oh-h! Oh-h!"

Thus ringing her own knell dies Chepa Matthews, aged sixteen.

No other knell is rung for her. The priestly guardian of the bells will not untie their austere sweet tongues.

Taken by a Kodak

POLO AT SANTA MONICA.

By G. L. Waring.

SANTA MONICA is the Newport of Southern California, standing on a high bluff overlooking the blue waters of the Pacific, guarded on the north by a ridge of picturesque mountains, the Sierra Santa Monica range, while to the south the land descends gradually until the cliff merges into the beach that circles away toward Redondo and the rest.

Two or three hundred years ago Santa Monica was a thriving Indian settlement,—the famous explorer Cabrillo calling it the land of smoke, from the many columns he saw rising. The land was not many years ago the ranch of Senator Jones of Nevada, and Colonel Baker of Los Angeles. First it began to be frequented by summer campers. The tents gradually increased, and finally a hotel was erected. More people came; the fine beach, the clear summer skies, attracted increasing numbers, until now we find Santa Monica a full-fledged watering place, with many attractive homes and a large and fashionable summer contingent. The Santa Monica summer is a series of absolutely perfect days with not a cloud in the sky, offering every inducement for the lover of outdoor sports. In July the tennis and polo clubs attract much attention. An afternoon at polo means a gathering of the clans, and society at Santa Monica turns out in force. The ladies take turns in serving lunch to the members and their friends; and a delightful afternoon is spent, the rush of the ponies, the spirited plays often made, evoking applause from the lookers on. Polo, for the benefit of the uninitiated, is very similar to hockey, but it is played on horseback, or rather pony back, the idea being to drive a ball between certain points and over a line, the struggle requiring the best horsemanship, pluck and nerve on the part of the rider. The game originated in India, where it is almost prehistoric.

The size of the ponies used is different in all countries where it is played; the standard in the regimental tournaments in India is thirteen hands, three inches; in England, fourteen hands; in America (I believe, but am not quite sure) it is fourteen hands, one and one-quarter inches. Of all standards the latter is the best, as a horse of this size is quite handy enough on a full-sized ground, and is better able, make and shape being equal, to carry a heavy man than a smaller animal of say thirteen hands, three inches, can be.

This, however, is about the limit of usefulness. The modern teams play under a combination, each man having his allotted place. The team is arranged generally as follows: The most responsible position is No. 4, or back. He has to save goals and also to make occasional runs himself, when No. 3 takes his place until he gets back again. No. 3 backs up No. 2

1. The Team. 2. A Young Player. 3. Nip and Tuck. 4. The Pony Objects.

and takes No. 4's place when necessary, and is always more or less to the front. No. 2 is the pre-eminent rustler of the team, being in the thickest of the fray and doing most of the hitting. No. 1, sometimes called the "flying-man," is continually making himself unpleasant to the other side, hustling, riding out, and hooking sticks, paying particular attention to the opposing back, and almost never striking the ball. He is a restless spirit, must be well mounted, ought to be light, is always on the go, and always annoying somebody. For a fast game of this kind,—when matches are frequent,—two or more ponies to each man are absolutely necessary, but it is quite possible to play a good ordinary kind of game with one, if the intervals are made long enough.

In Southern California polo has not yet arrived at this systematized state of perfection, principally for the reasons that there are not enough players and not enough ponies. The order of the day is more or less "gallery play," —a good hard work in any direction, to entertain the spectators and friends of the various sides.

The Southern California Polo Club at Santa Monica has completed the third season of its existence. It has always been exceedingly popular with the summer residents of the resort, —as on-lookers; but the difficulty has hitherto been to find men who have the leisure, or the riding capability, or the hardihood, or whatever it is that is necessary, to induce them to become active players. Were it not for the kindness of many who become non-playing members, and contribute to the fund, it would not be possible to continue, as the expenses of caring for the ground are heavy. The honor of

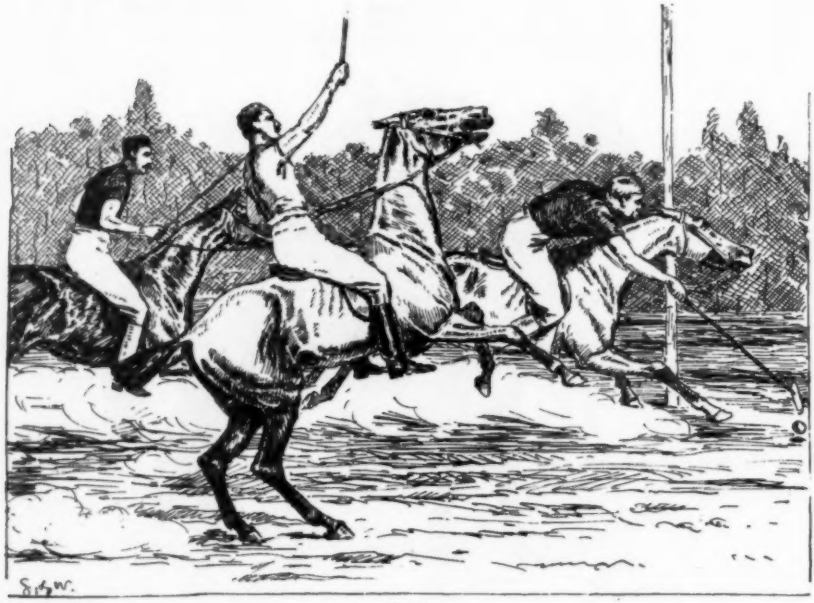
G. L. Waring on La Pulga.

starting the club is due to Mr. Edmonds, of Los Angeles. His recounted deeds of valor with the polo-stick in many lands fired an enthusiastic band to the pitch of obtaining a ground (kindly leased by Messrs. Jones & Baker, the local magnates), and scouring the country for ponies.

The ground—though too small—is very nicely situated, being bounded on the west side by a plantation of gums and pepper trees. An agreeable shade in the afternoon is thus provided for the spectators, and a screen presented to the prevailing westerly winds.

Viewing it as played at Santa Monica at the present day, it is very difficult to realize the wild and lurid go-as-you-please scramble that at first pertained. Interminable scuffles, amid clouds of dust, resulted in hard knocks for the ponies; but the enthusiasm was undamped, though it became evident that the ground could not long remain in the same condition. A watering cart was accordingly bought, and with the improvement of the ground a corresponding improvement in the play was soon noticeable.

During the first season the club had an unfortunate set-back. It undertook to give an exhibition match at the race-track at Los Angeles, with a view to popularize the game, and a good deal of money—not very plentiful at the time—was spent in band, advertising, posters, and other luxuries. A small admission fee of twenty-five cents was charged to defray these expenses; but the public did not assemble in their thousands,—as was expected, — to witness the match. Sooth to say, the spectators were chiefly stable boys, who—tell it not in Gath—were rather inclined to guy the game.



Goal.

The loss of money at a critical period was serious; but Mr. R. P. Carter, now a member of Madam Modjeska's

Company, gallantly stepped into the breach, organized an amateur theatrical company, gave a performance at Santa Monica, and the visitors at that place nobly responding, the prostrate club was again set upon its legs.

During the second season combined athletic sports and pony races were held on the grounds, and were repeated on September 8th and 9th of this year on the polo ground and the new racetrack.

Good ponies are very hard to find. There are plenty of them tough enough and strong enough, but as a rule they are sadly lacking in quality, and are consequently slow.

A Run.

At first sight it would appear that a Mexican broken cow-pony would be just the thing for the purpose, but this is really a debatable question. In my humble opinion, a horse broken to a severe bit is afraid to face it, and consequently goes in an uncollected manner.

He may certainly turn quickly, but he is liable to do so on his shoulders, instead of having his hind legs under him.

This is not only dangerous,—as likely to cause a fall when going fast, —but is also tiring to the animal as well as rough for the rider. Besides it is nearly impossible to regulate a horse's speed to nice gradations (which is very necessary in polo) unless he will take some hold of the bit.

A hackamore-broken horse is continually poking his nose in the air.

On the Santa Monica ground, which is smaller than the regulation size, being 190 yards long, instead of 250 yards, a very fast pony is not absolutely necessary, but they must be able to run well.

Quickness at turning, good temper and absence of fear are the main qualifications; and, out of the many that have been tried since the beginning of the game, only about three can be said to thoroughly meet all requirements. The laudable desire of ponies to get into the game while being held, that we have heard of in other climes, does not seem to actuate the Californian mustang. In fact, if he shows any anxiety at all on this subject, it is to get as far away as possible from the whirling stick and flying ball.

The Santa Monica ground presents a spirited appearance on play days. Generally there is a cool breeze blowing from the sea; and the guests from the hotels and the casino with their carriages form an inclosure about the area eager to applaud the fine plays of their friends. The ponies appear to know that something more than usual is expected from them, and are full of life and spirit. Some are being walked

up and down by grooms, others are being inspected by their owners, who indicate their fine points and tell stories of their deeds in former seasons. Finally the bell rings, and the sides take their places; and at the word many hoofs strike the hard ground. There is a rush of forms, and a fleet pony dashes to the front, while another from the opposing forces is coming on at equal speed. The fair spectators hold their breath, as it appears that both horses will meet in common ruin; his foot against the pony he lifts and is up, springs to the saddle, and by a trick of fortune is now speeding along with the ball before him. Victory is within his grasp. The final blow is about to be struck, when like a whirlwind down comes an opponent, who locks sticks with him, while another player sends the ball whirling in another direction. Now the players are bunched all together; and the sharp clicks of the sticks, the stamping of feet, the hurried rushes and bending

W. H. Young on the Marquis.

but one is ahead, and by a deft stroke the ball goes whirling down the grounds despite vicious blows at it all along the line. Any one who has been in the midst of a football rush can imagine the excitement of trying to produce the same results, mounted upon firy ponies. The latter are of as many minds and dispositions, and there is many a slip. Here two ponies come together, and one goes sprawling on the ground. The rider is caught for a moment, but by deftly putting forms tell of a heated struggle. Then some lucky pony kicks the ball away, a rider sees it, and again the field is away. This time it is a race, with the entire field to win who shall get it. One pony evidently has determined to get it, and with a rush carries his rider well ahead of the rest. The stick whistles through the air. A sharp click, heard distinctly over the field, and a band of hard riders pull up at the goal just in time to see the little object go over the line amid the applause from

the assembled guests. Half an hour or so is now given for rest. The ponies are unsaddled and blanketed, and walked up and down; while the savory punch-bowl and luncheon invite the players, and so goes the game. The play is diversified by various experimental runs. Riders run at the ball at full speed to see how far they can send it; while at other times obstacle races and various feats of skill are given of interest to players and spectators.

played; and though they commenced during the first season, and have been hard at it all the time that play has been going on, they are both now perfectly sound, having each carried about 180 pounds. If Cigarette were faster and rather larger she would be a perfect polo pony.

Mr. Proctor's Rex is a dark chestnut, good-looking stallion, not tall but thick through, is fast and the toughest of the tough, having been played since the commencement and

J. B. Proctor and Rex.

To criticise the style of the players would be invidious; but as the ponies will not be able to read this article, and are well known to all lovers of sport in Los Angeles County, I think I may venture on a short description of them. The best one now playing and the truest is Captain Bolton's Cigarette, a small, wiry, light, well-bred looking roan mare. For the benefit of the advocates of big bone it would be as well to state that this pony and Santa Clara have the smallest bone of any ponies that have in the most energetic manner. There is a legend that he came from Texas.

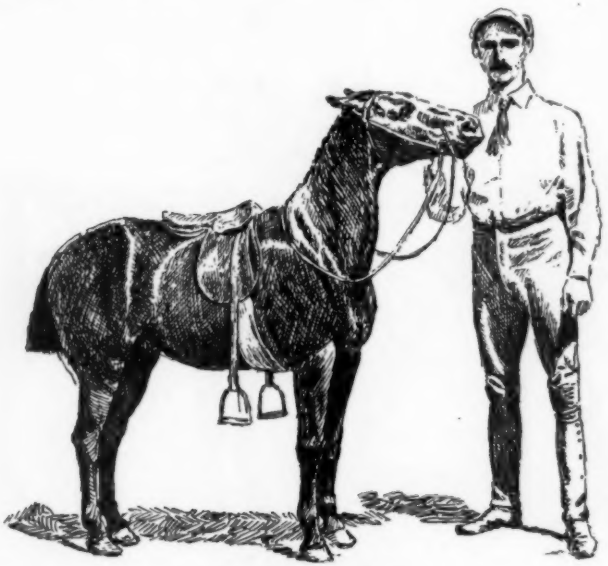
Mr. Woodhouse, the honorary secretary, official measurer, and controller of the water-cart, has had several animals. Kitty, an old brown mare, formerly chore-pony at a livery stable, is, or was,—for her polo days are over owing to the encroachments of age and failing fore-legs,—by far the best. She was well up to weight in her better days, fast for a spurt and perfectly true and reliable. Miss Jummy began well but eventually took a

violent dislike to the game and refused to play at all. Old Bessie was as true as steel but as slow as a man in boots. Black Bess, Bronco, Buckeye, Billy and others have either died or been found wanting, and so passed out of the polo circle.

Mr. Young had a large, roan pony fully up to the standard height called the Marquis. He was of homely appearance, but was pretty fast, quick and good. Santa Clara is a thoroughbred mare, bred for a race-horse, but being too small for that purpose was relegated to the polo-ground. She is very fast, exceedingly handy, but rather a puller, and not quite as true as she might be. La Pulga is a strong, good-looking, fast mare, that might with advantage take to the game a good deal better than she does.

Mr. Carter's Pepita was—she plays no longer—phlegmatic and powerful, but fast when roused up, and fairly good. Mr. Haigh's gray Buck, though slow, can keep it up all day, and is a true and patient animal. Mr. Allen's Fanny is a very nicely shaped brown mare of good size, and fast, but does not take as kindly to the game as she used to, while Mr. Machell's Tom Tit is a sturdy small pony, and stands a deal of work well. In the racing department Santa Clara has never yet been beaten by a pony. La Pulga also is very fast. Rex, Pepita, the Marquis and Fanny are about on a par and go a good pace.

The principal players at the present time are Messrs. J. B. Proctor, E. Woodhouse, W. H. Young, J. Machell, J. Haigh, Templar Allen, G. L. Waring and Captain M. Bolton. From these it would be possible to select a team of four that, mounted on really good ponies, would render a good account of itself in good company. The officers for the present year are E. Gorham, Esq., president; H. A. Winslow, Esq., vice-president; E. Woodhouse, Esq., secretary-treasurer; J. B. Proctor, Esq., captain, and the officers and W. H. Young, Esq., and G. L. Waring, Esq., executive committee.



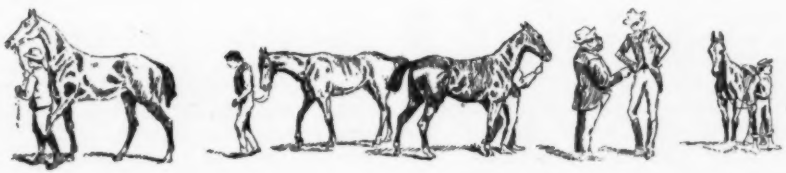
J. Machell and Tom Tit.

Polo is a game that necessitates skill, nerve and dash. It is better for the spectators than baseball, football, lawn-tennis or cricket; and for the players it is the most exciting of all outdoor games, though not the most difficult to attain proficiency in. To play lawn-tennis or cricket really well it is necessary to begin as a boy; but any one who has used his right arm in any game and can ride may expect with some practice to play polo fairly well, and with more practice, if he be of the right temperament, to eventually become an expert. It is a game eminently suited to California, where there is so little rain to interfere, and where it can be carried on on a cheap basis. The chief expense is the watering of the ground; this must be done every time a game is played, as dust spoils the game by obstructing the view, and the surface of the ground soon becomes cut up and uneven unless this is attended to. A full-sized ground, where water can be obtained close at hand, can be thoroughly sprinkled enough for one afternoon's play for seven dollars.

This is the main item of expense. The cost of balls is not large; and each player will probably require three to five sticks a month according as he is lucky or not. These cost about two dollars and seventy-five cents each. A pony can be well kept at Santa Monica for six dollars a month.

It is a pity that there are not more clubs in Southern California, so that inter-club tournaments could take place. In the winter months Pasadena, Riverside and Santa Barbara, and Monterey for San Franciscans, could well support a club each.

In the conclusion it is a game that should be played only by those who have the feelings and instincts of gentlemen, as rough, unmannerly play is not only dangerous and cruel to the ponies, but it also spoils the game. It is quite possible to play hard and ride out as much as desired without causing any unnecessary danger, if the rules are attended to.



An interval

AT THE DRY TORTUGAS DURING THE WAR.

A LADY'S JOURNAL.

(Commenced in January number.)

[The history of the late war has been well described in various publications, but that portion relating to the famous Dry Tortugas prison, where thousands of men were kept during the war, and where those connected with the assassination of President Lincoln were confined, has never been described, yet the events are now of great historical value. The island upon which the great prison was established was a sand bank comprising but thirteen acres,—one of the last of the keys representing the end of the great Florida reef. For seven or eight years a lady, the wife of one of the surgeons, lived in this isolated spot and viewed all the incidents from the appearance of the first war cloud until the declaration of peace. The following chapters were not written or intended for publication, the events being jotted down simply for friends in the North; and THE CALIFORNIAN has been enabled to give them to the public in a series of chapters, believing that many are of historical interest and value, and also as showing the singular life of a lady in one of the most out-of-the-way spots in this country. This chapter is illustrated with a view of the headquarters at the great prison, one of the largest forts on the western continent.—EDITOR.]

THE destination of Captain Meigs and his party was a secret. It naturally aroused much conjecture on our little island; but we soon heard that the expedition had arrived at Fort Pickens, and that the object was to reinforce the garrison there. Even this movement did not convince our genial commander, Major Arnold, that war was imminent; yet with the vigilance of the soldier he prepared for the struggle that was to come, and began a series of fortifications that would have made the island a difficult place to capture. In fact, fully armed, the Dry Tortugas was almost impregnable; and everything pointed to the conclusion that the garrison would soon be in a position to defend itself against the world. The outside fortifications began with a breastwork on Bush Key, which hitherto had been the home of the sea-gull. The trees were to be cut and made into facines. Sand Key was to have a battery; and finally we learned that the fort was to become a naval station, vessels being on the way with stores.

Key West was now under Federal authority. New officers were appointed, to command the four hundred men on the ground; and we were assured that more would be sent if necessary. I asked Major Arnold if it was in fear of a foreign power that all this preparation was being made, as no one thought England or France would acknowledge a Southern confederacy.

He replied that possibly the Government thought that, in case of war, Spain might stand ready to pick up what spoils could be easily taken during a national explosion.

Lieutenant Morton now went to Key West for shovels, wheelbarrows and workmen. He had sent to New York for three hundred men, and some sappers and miners, who came on the last boat; and work on Bird Key began at once.

One day the men discovered a large cannon several feet from the shore in very good condition. It had been spiked, and had the English arms and date of seventeen hundred on it. We invested it with a romance at once, probably not far from the truth, as it belonged to the pirates; who must have been followed, and who had spiked and thrown it overboard to prevent it from falling into the hands of the enemy.

These islands were known to have been the resort of Spanish buccaneers years before. Captain Benners, the lighthouse keeper, found several thousand dollars in Spanish doubloons on

East Key, ten miles nearer Key West; and many stories were told of other finds.

It was summer; the men worked bravely in the broiling sun. The mercury stood at 91 degrees on many days; yet no case of sunstroke occurred, but other troubles came. The men began to have scurvy for want of proper food, and some had to be sent North.

The day we received the news of the attack on Fort Sumter was a memorable one. The officers were demoralized; for none of them, I think, had fully realized that the end was to be war, and the country the scene of bloodshed. They felt as restless as though they were imprisoned. All wanted to go to the front, and share in the glory and excitement; and it certainly was very trying to remain here doing nothing but guard a fort that now would not in any probability be in danger of an attack, so well fortified were we.

They told us that if there should be an attack the women and children were to be put in an empty reservoir under one of the bastions farthest from the enemy; and our plans were all laid, and rehearsed by the children day after day.

One day, after having been to Bird Key, we saw a very dense smoke on the horizon, which was moving slowly along. Speculation was rife at once. As we came up the walk Major Arnold called from the upper piazza to know if we were going out on the water again, as sentinels were posted on every side. The large guns were loaded, and two brass field-pieces in the gateway were also prepared, with the men ready to use them at a moment's notice.

My house boy told me that there was a rumor that the fort was to be attacked, and that a workman, an American lately engaged, who came from Havana, had been arrested as a spy but that they were not able to prove anything against him: a sample of the rumors in our little settlement.

The next morning the steamer was still in sight, going back and forth in a mysterious manner; and we could see that some sailing vessels had joined her. They disappeared before night, however, and we heard nothing from them; but later news came that the Confederate yacht *Wanderer* was out as a privateer by permission of President Davis; so we concluded that it was she, while the steamer might have been a convoy.

One day I suddenly heard the sentinel on the east face shout, "Corporal of the guard, post number one," in a shrill, excited tone. This was taken up by the next sentinel, "Corporal of the guard, post number one," still another repeating it, until the word reached the guardhouse. In a few moments a corporal went up the walk on the run, and I soon saw him on the fort; then the men began to go up; and soon we were all on the ramparts. Away on the horizon was a steamer headed for the channel. The suspicious black smoke was rising every moment. She evidently knew the channel.

My husband was health officer; and I soon saw his eight-oared barge pulling across the Long Key reef with the officer of the day. It was their duty to intercept the vessel off the second buoy. On came the steamer, a black, suspicious-looking craft, still showing no signal; and such headway did she make that she passed the Sand Key buoy before the barge reached her, and steamed on rapidly, paying no attention to their signals, heading now for the inside buoy. The long roll was sounded, the men fell in; and in a trice the big guns were manned, and with a roar the first gun belched forth its warning from the Dry Tortugas. A solid shot whistled across the bow of the incomer so near the cutwater that half an hour later I heard the Captain say: "Well, Major Arnold, I must compliment you on that shot. Three turns more of our wheels, and you would have blown my bow to splinters."

The steamer was a transport in need of coal; and its officers had simply

misunderstood the signals. They brought no news, except that the Spanish government had refused to admit vessels flying the Confederate flag into the harbor of Havana, which was in a measure comforting to us.

The following day the man-of-war *St. Louis* came in, her officers adding much to the social life of the Key.

During their stay Lieutenant Morton invited us down to see the oath of allegiance taken by Captain Wilson and the crew of the schooner *Tortugas*. It was quite an impressive ceremony, after which they were provided with two brass guns and small arms; and we called her our gunboat.

The coming in of so many steamers relieved somewhat the monotony of our lives; yet we did feel very far away, and the officers were still impatient at the isolation.

The *Tortugas* now went out as a gunboat, flying the stars and stripes, saluting it with thirteen guns. Captain Wilson evidently enjoyed his command.

A steamer came in with news to the eleventh, ordering the *St. Louis* back to Fort Pickens, and taking all the sand bags we had made to stop the open spaces in our second tier of casemates, as we had no fear of needing them then.

Anxiety continued to increase. Mutterings of war were heard on every hand. Neither side seemed likely to yield; and, if an agreement could not be brought about, it must inevitably result in that most horrible of all wars, a civil one.

The Southern States were arraigning themselves, one after another, like line of battle ships bristling for an engagement; and every man who had lived in any of these States immediately felt that his duty called him to stand by it, regardless of the Constitution.

One officer sympathized so strongly with three States that he had a fever of secession as each one threw off the yoke of allegiance to the Union; but he managed to stand by the colors he was educated under until the last of the three fell out of line, when he sent in his resignation, and became a non-combatant.

These were sad days, though sadder ones were to follow; yet I think no one dreamed that if war came it would be a long one. A few months would settle the difficulty. I think that was the feeling of all the older officers.

The population increased so rapidly that in June, 1861, the census was taken, showing that 550 souls were living on this sandbank of thirteen acres, too large a number we deemed for safety, little thinking that before long Fort Jefferson would be the home of several thousand men.

By enforcing a strict quarantine my husband kept the spectre of yellow fever, that was in Havana sixty miles away, at bay through the long summer, though the strict confinement told upon us in other ways.

In June the gulls always came in thousands to lay their eggs on Bird Key, the season being in the nature of a festival and feast for us, as we made up egg-collecting parties. The eggs were enjoyed by us, as they were luxuries here. The quantity of eggs may be imagined when it is known that we could hardly walk in some places without stepping upon them, and would often take away a flour barrel full of the speckled beauties.

This year the men had taken possession of and were engaged in throwing up a battery on the island; and we were interested to learn whether it would result in the birds seeking some other place. At first they were shy and distrustful; but when they found that the soldiers did not disturb them they took possession of the old places, and could be seen from the fort hanging over the Key like a black cloud, while near at hand their cries drowned the voice.

On the night of the 1st of July we saw the comet of '61 from the top of the fort. Its appearance was sublime, as it extended over nearly half of the heavens. The colored people were inclined to be superstitious; and

many wondered if the world was not coming to an end.

On the night of the 4th of July Captain Morton, whose nervous energy never seemed to flag, took us to Bird Key in the barge, with Chinese lanterns at the top of each of the two masts. The black boys accompanied us with their banjos and guitars, and made very sweet music. There we built bonfires and displayed some fireworks, celebrating our Fourth on this little coral island in the Gulf.

The afternoon had its excitement in the arrival of the steamer *State of Georgia* with two companies of Wilson's zouaves. It was supposed they were sent here as a safe place to drill them, as we had all the troops that were needed.

On the seventeenth a bark from New York came in, and also the steamer *Vanderbilt* from Fort Pickens, bound directly for New York. We concluded to avail ourselves of the opportunity of going North on a visit, and sailed on the evening of the 20th of July, leaving the fort with the most beautiful sunset for a background, the gorgeous colors streaming up behind, the fort looking almost as though it were going to be consumed in the blaze of glory that covered all that part of the sky. It was so impressive that we watched it from the deck of the steamer until the fort stood grim and dark against the sky.

We were four days going to New York. The steamer carried but nine passengers, officers who had been promoted and were going to join their regiments, all eager to go to the front.

The captain of the steamer had some fear of the *Florida*, which was cruising in those waters, and watched the horizon for black smoke. He kept one engine banked, as the steamer was short of coal, until we were up the coast beyond North Carolina, when he put on all steam, and we almost flew through the water.

When we took on a pilot off Barnegat we heard of the first Bull Run disaster.

During our stay North we visited Captain Woodbury in Washington. What a contrast to our visit of less than two years before, when the grass was literally growing in some of the streets; and it seemed a sleepy, restful place, where people took life calmly and enjoyed it. Now the streets were deeply cut by heavy wagons transporting guns. Everybody was rushing about with an excited air. Most of the men one met on the street wore uniforms significant of their duties; and we heard little talk beside war and rumors of war.

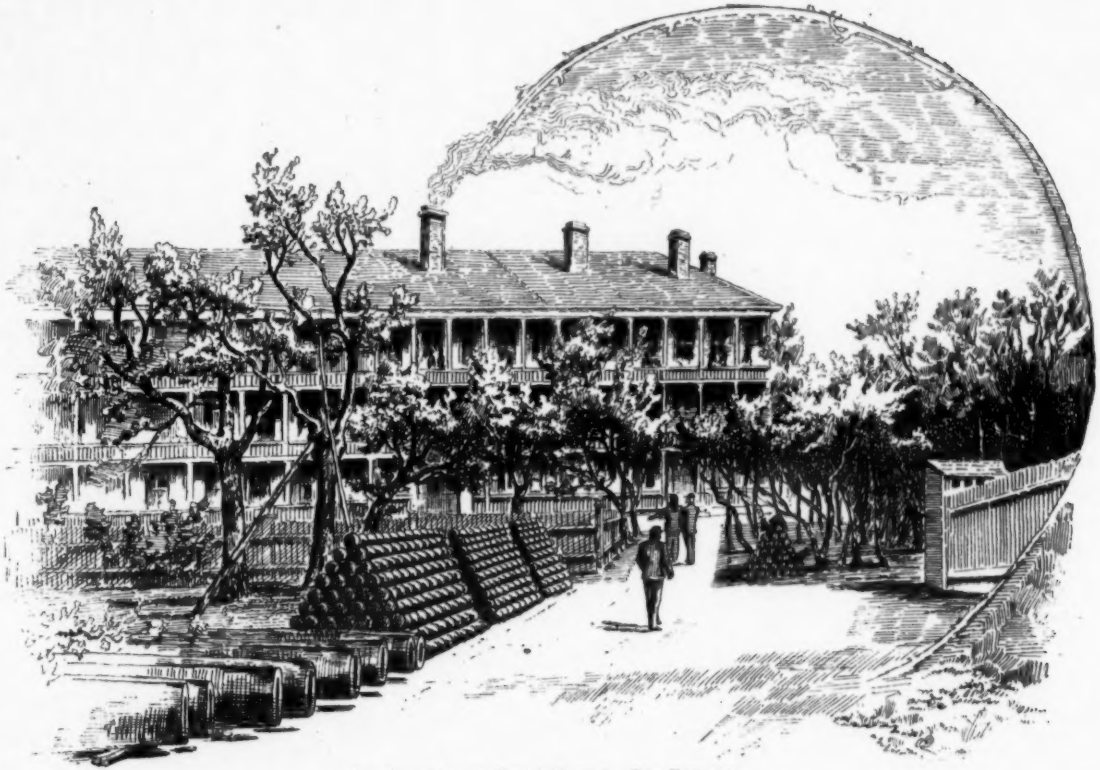
While here we also met Captain Meigs and Captain Craven, the latter there awaiting orders.

One day during our visit my husband came home and reported that he had seen the smoke of the battle of Munson's Hill from the top of the Treasury,—a fact which brought home the reality that the seat of war was not far from the National capital. My husband felt that his services were needed at the fort, as he was acclimated. So our visit was cut short; and we were soon on our way back to Tortugas, on the old transport *Philadelphia*, which we afterwards learned had been condemned.

We left in a driving snowstorm, and lay off Fort Hamilton until morning, when we took on board Major Haskins with one company of troops for Key West, and some officers for Fort Pickens. My sister and Mrs. C——, who was returning from a summer spent North, were the only ladies besides myself on board.

The old *Philadelphia* was not the most reliable ship, but she carried us safely, and did much more duty even after she had been finally condemned.

The morning before reaching Key West Major Haskins surprised us all with *reveille*, which sounded very cheerful in the still morning air. Very soon afterward we met the *Rhode Island*, which hailed us and sent a boat with her pilot, and took letters from us for New York. She had on board an officer whom we left at



Headquarters at Fort Jefferson,—Dry Tortugas.

Tortugas; and they also gave us the news of the bombardment of Fort Pickens, which place the steamer had just left. It was quite an excitement; for, although she was not more than one hundred yards distant, the little boats in going back and forth were entirely hidden by the waves.

The next morning found us anchored safely in Key West harbor, where we spent the day and left my sister with Mrs. C—— in her lovely home under the cocoanut trees.

The next night at ten we were outside the buoy at Tortugas, where the captain of the steamer threw up rockets and burned blue lights; but no pilot came out until morning, when we were soon anchored opposite to the sally-port, where Captain Morton met and escorted us up to our old home.

There had been a great many changes during the few months of our absence. Major Arnold had left; and most of the troops had been exchanged; but one great pleasure I found on my return was in the addition of three ladies to the garrison.

I presume it will be difficult to realize fully the isolation of that kind of fort life,—even a great contrast to a life on the plains miles away from any town or ranch. We were in an inclosure of thirteen acres sixty miles from Key West and eighty from Havana, with nothing outside of the towering brick walls to walk on but a narrow seawall inclosing it, sixty feet away,—wide enough for two people to walk, with water on each side.

On the plains, if one wearied of their surroundings or were tired of their neighbors, they could ride out of sight, returning when they chose; but here it behooved people to keep up amiable relations with their surroundings, as they could not get away from them. I have been told by people who have crossed the plains, with parties who were most desirable companions for the first few weeks, that the isolation and constant companionship of the same persons day after day changed them entirely, developing freaks of nature unknown to them before, which proves that a change of scene and people is good for human nature generally.

This life was certainly a test of our dispositions in that respect; for we were entirely dependent upon ourselves for all our pleasures, and, I might almost say, comfort, for a want of harmony very materially interferes with that.

Captain Morton's assistant had brought his wife with him; and they formed a mess in the quarters we occupied before going North. He gave us the choice of remaining with them or taking a small house across parade which the Engineer Department was building. We accepted the house, remaining with them until it was finished.

The newcomers were Mr. and Mrs. J——, Mrs. R——, who had been an army lady, and Mrs. H——, whose husband had been promoted from the ranks. With Mr. Phillips' family, consisting of a wife, son and two daughters, and with the wife and niece of the lighthouse keeper, we could gather quite a party of ladies, making us feel much less out of the world; and we soon became quite sociable.

The increase of people brought many necessaries which added to our comfort, although everything was expensive: Butter fifty cents a pound, lard twenty, and other things in proportion.

The Government began to tax all salaries exceeding eight hundred dollars, and many other things, which, with some whose patriotism was exceedingly sensitive when it touched their pockets so directly, caused no little grumbling. Later in the season, while my husband was on the mainland, he came across a camp of irregular Florida cavalry; and the following lines in pencil were handed him, nameless as to authorship; but whoever it was evidently felt that the cause

hardly warranted all he was going through:

We are taxed for our clothes,
Our meat and our bread,
On our baskets and dishes,
Our tables and bed.
On our tea, on our coffee,
Our fuel and lights;
And we are taxed so severely
We can't sleep o' nights.

And it 's all for the nigger!
Great God! can this be,
In the land of the brave
And the home of the free?

We are stamped on our mortgages,
Checks, notes and bills,
On our deeds, on our contracts,
And on our last wills!
And the star spangled banner
In mourning doth wave,
O'er the wealth of the nation
Turned into the grave.

And its all for the nigger, etc.

We are taxed on our office,
Our stores and our shops,
On our stoves and our barrels,
Our brooms and our mops,
On our horses and cattle;
And if we should die
We are taxed for our coffins
In which we must lie.

And its all for the nigger, etc.

We are taxed for all goods
By kind Providence given;
We are taxed for the Bible,
Which points us to Heaven:
And when we ascend
To the Heavenly goal
They would, if they could,
Stick a stamp on our soul!!

And its all for the nigger!
Great God! can this be,
In the land of the brave
And the home of the free?

Water was now a great consideration, with so large a garrison; and at this time the men were put on an allowance, it became so low. Fortunately we had the unusual occurrence of some hard rains and thunder-storms; and for a time the supply was sufficient.

All events were of consequence and even of importance to us, and without realizing that it helped to break the monotony of what would have been otherwise a very monotonous existence.

The building of the works had been suspended on the other Keys, as the feeling of security increased with our reinforcement of guns and troops.

We had a little excitement in the form of a suspicious-looking schooner that came in ostensibly in distress. Both topmasts were gone, and she was nearly out of provisions and water. Her captain said they ran the blockade; but they had secession passports, although they claimed to be fleeing from the rebels. Colonel Brooks ordered Captain Morton with four soldiers to go on board, after the captain had been put in confinement. They found two ladies and other passengers amounting to twenty people. Captain Morton said the ladies gave him their keys so pleasantly it made him quite ashamed of his duty. One trunk was very nicely packed with a hoop-skirt and a revolver in the bottom. They found the log-book notes very suspicious, besides their passports; but Colonel Brooks allowed them to go to Key West, sending a schooner after them to see if they went there or to Dixie again.

The command at that time consisted of one company of regulars under Captain Langdon, and four companies of volunteers,—Wilson's zouaves. Some of the latter were without doubt very questionable characters; and, as the officers had been chosen from among themselves, the matter of discipline had been so far rather a surprise to us.

There had been an order issued at headquarters that any soldier found intoxicated would be tied up. There had been no trouble, as in such isolated places that could be more easily managed; yet the fishermen sometimes brought whiskey and smuggled it ashore, selling it to the men. But a vessel came in with stores; and some whiskey was carried to the commissary for safe-keeping while the soldiers were unloading the cargo.

We were going out rowing about half-past seven, when we heard a gun fired by one of the sentinels. Some men were seen running away with whiskey, the result being that on our return an hour later, as we came through the sally-port, a man was being tied up. As the officers with

us passed him he called out, "Tie me tighter."

We had been in our quarters but a few moments when there was a great uproar, a call for the guard, screaming, shouting and running from all parts of the fort toward the guardhouse.

Captain Morton, who had walked up to the quarters with us, hurried down, fearing there might be trouble with the engineers.

By that time we heard the call for Company M, the regulars; and the noise, which was still increasing, was most terrifying. We could hear the men loading their muskets, as they were in the casemates near the house, and saw them go down "double quick." Then followed more derisive yells, and for a few seconds it was quiet. We in the quarters knew nothing of the cause of the disturbance, as no one had returned. They left us with orders to stay indoors; that there would probably be no trouble. The order we could obey; but the statement we felt, with pale faces I dare say, was to be proven.

My husband had left us at the wharf to visit his hospital outside. A detachment came "double quick" to the bastion at the other corner of the quarters, bringing out a field-piece, which in a few moments was put in a position to command the building occupied by the volunteers; and in a short time Captain Morton returned, telling us that the company in which the man belonged who was tied up rushed in and cut him down in defiance of the guard, then ran to their quarters for their guns, and were in open mutiny. But by that time Captain Langdon had his guard ready, and told them if they advanced he should give the order to fire. They hesitated, held a consultation among themselves, evidently realizing that the Fifth Artillery was not to be trifled with, and finally retired to their quarters, there calling out for all or any one to come in at their peril. After awhile some parleying was done; but they refused to come out and deliver up their guns, and were still abusive, calling upon any one who dared to come in, and they would fight him.

Colonel Brooks was a short man and rather slight, but not wanting in bravery. He handed his sword to an officer, and unarmed walked into the building,—full of infuriated half-drunken men,—an act requiring no small amount of courage; for I doubt if you find in any volunteer soldiers that instinctive fealty to the officer which seems to be natural to the regular troops. On the other hand these rough, reckless men had something in their natures that immediately responded to so bold an act. They cheered lustily for the "little Colonel," and after a good deal of bluster and talk settled down and became quiet.

A picket was formed, and forty of Company M's men put on guard; and toward the small hours people settled down for the night. I think if some of the ladies had told the truth the next morning, they would have admitted to having slept with one eye open. In the early morning the mutineers were brought up in squads by the guard and ordered to stack their guns in front of the commanding officer's quarters. Then they were taken back to the guardhouse, where the guns were examined to see whose were loaded, and were restacked. The prisoners were then brought up again, six at a time, to take their guns. In that way they found out whose were loaded. Some of the guns had evidently had the charge hurriedly withdrawn; and some even tried to evade taking the ones that belonged to them.

Our windows were on the same floor; and we could see them through the blinds. There were two or three most desperate-looking fellows. They were placed in close confinement; and it proved such a salutary lesson to the others that we had no further trouble. But I often wondered how it would have resulted had there been no

regular troops there; for the zouaves were men enlisted in New York City, some of the most undisciplined, dangerous characters, who under the influence of liquor would be desperate and uncontrollable. Some of the workmen were little better. Both together, had they combined forces, might have been dangerous.

The following Sunday at dress parade the prisoners were brought up by the guard, the companies forming about them while the adjutant read to them the army laws. Two of them bore such a defiant manner while the officer was reading, that it was with a feeling of satisfaction and security that we learned that they would be kept behind the bars during the remainder of their stay on the island.

(To be continued.)

WITH THE GIFT OF AN OPAL.

By Jean La Rue Burnett.

AT sunrise yestermorn the Orient blazed
Fire-wedded to the heavens' richest hues,
And Earth awakened from her sleep amazed
To view such godly glories 'mid her dews.
Great globes of amber and rare saffron hung
Like love-lamps in the crystal of the sky:
While Dawn's fierce warriors in mad fury flung
The flaming silver of their swords a-high.
Then in a blood-red chariot of fire
Came o'er the misty heights the Prince of Day;
And as his steeds sped proudly high and higher
I watched the gorgeous beauties melt away.

Heart-heavy at this sight of sad decay
I turned unto the earth my sorrowing eyes;
When lo! I saw each golden light and ray,
That erstwhile gleamed amid the mellow skies,
Reflected in the depths of one great tear
That nestled fondly on the earth's soft breast,—
Pure type of passioned love,—an opal sphere.
I give it thee, a jewel for thy crest;
But, lady, heedful be lest thy sweet eyes
Conspire to drive its envious beams away,
As were the beauties of the morning skies
Eclipsed by more majestic lights of day.

CLIMBING SNOW-COVERED SHASTA.

By George Hamlin Fitch.

FEW people really know great mountain peaks like Shasta. Probably in this State there are only two men who may be said to be at home on Shasta,—who know its various moods in winter and summer, and who love the grim volcanic peak because of the very dangers and hardships they have encountered while scaling its rugged face. These men are the old hunter Sisson, who has lived for over thirty years in the shadow of the mountain, and John Muir, the naturalist, who has studied Shasta as other men study a language or a science, and who has made it tell him all its secrets. Both men have paid dearly for their mountain lore, for Sisson is prematurely aged by exposure to the weather in his hundreds of expeditions into the fastnesses of Shasta; while Muir on several occasions has narrowly escaped death in great storms on the summit of the mountain. Sisson will tell you of hunting trips in which he was alone for days in a trackless wilderness of snow which would have been the grave of a less skillful mountaineer; while Muir in his admirable article on Shasta in "Picturesque California" has told of his vigil on the mountain in a great snowstorm that forced him to remain in camp for several days. To few men is given this supreme skill in mountaineering which makes them flout the worst storms of winter; but any one in good health and with moderate experience in mountain climbing may get in a few days so clear an idea of the beauties of Shasta that he will carry in his memory until the day he dies the picture of this superb peak, with its bold, sweeping outlines, etched against the clear, blue sky.

It was my good fortune last September, after a year of hard work, to secure a fortnight's vacation, half of which I spent on the edge of the Colorado Desert, not far from the mysterious Salton Lake, that excited the interest of scientists, but is now little more than a name. Then from this fringe of the desert, with its burning heat of 110 degrees in the shade, the railroad took me, straight almost as the crow flies, to the frozen North. It was a reversal of the Fourth of July orator's favorite phrase, "from Siskiyou to San Diego;" but it served to give an excellent idea of the magnitude of California and of the incomparable variety of climate, soil and products that may be found within its borders. Any one in search of the picturesque cannot do better than take this twelve hours' ride from Sacramento to Shasta. The upper Sacramento Valley, dotted with superb oaks and guarded by the Lassen Butte, standing like a warder of the peaceful plain, furnishes one of the most charming prospects in the country. Beyond Redding, the busy county-seat of Shasta, the Sacramento Valley narrows till it is little more than a great cañon through which bowls the swiftly flowing river. The railroad leaps the river again and again; it dashes round bold headlands, hugs the sides of precipices, plunges into tunnel after tunnel, crosses frail trellises that span enormous gulches. Sometimes it doubles upon itself like a huge snake coiling its folds. Every device known to the

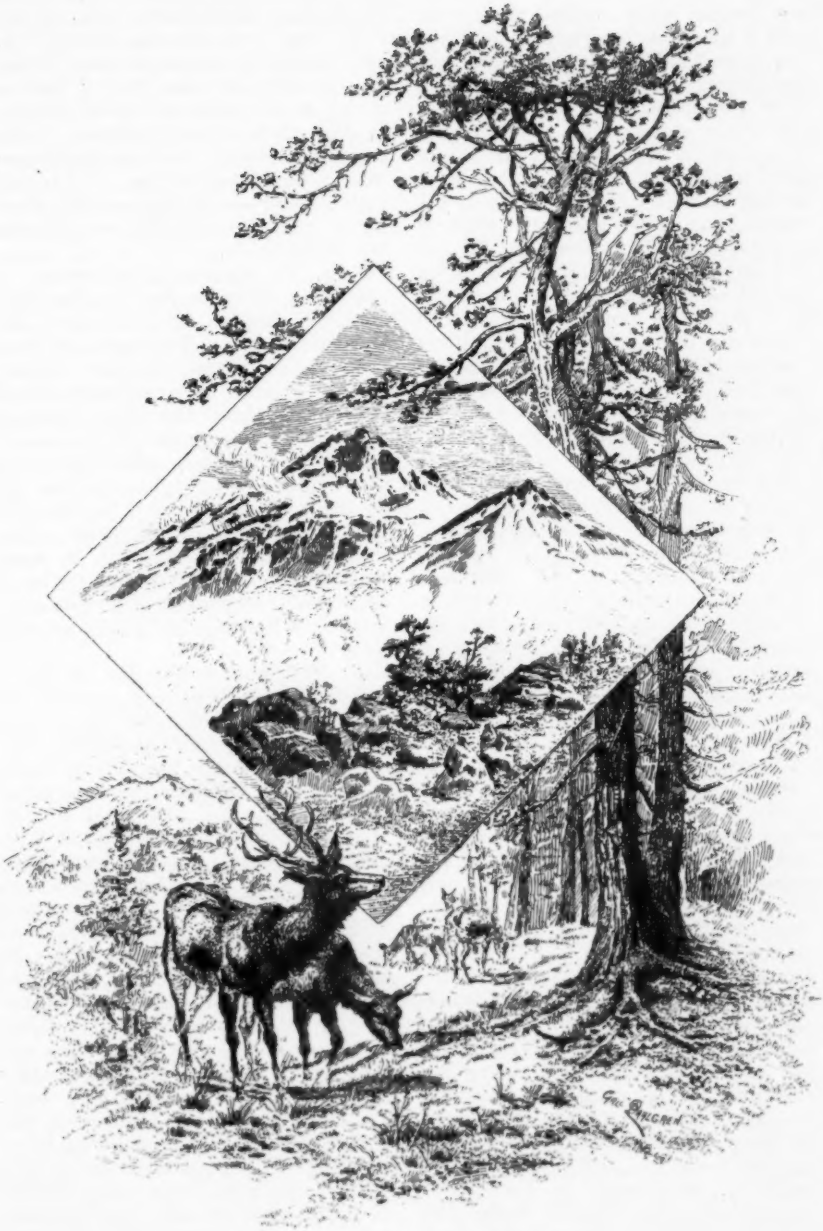
railroad engineer has been employed here to overcome the difficulties of nature; and the conquest is so complete that one who knows nothing of grades or levels or curves cannot fail to be struck with this triumph of man over the blind forces arrayed against him. Shasta first reveals itself a cone-shaped mass of white against the sky, looking very much like pictures of Japan's sacred mountain, Fuziyama. A sudden turn in the river and the mountain is lost to view, only to reappear a few moments later, all aglow with the morning sunlight which is reflected in dazzling brightness from its snow-covered crest and flanks.

"Why," said a traveling companion of mine, "it's almost covered with snow, yet only a few days ago when I came down from Oregon you could only see a bit of snow here and there in the cañons. What a remarkable transformation in a single week!" Then turning to me he said with a chuckle: "I don't envy you your climb up Shasta now. That is all fresh snow, and you will have to wade through it waist deep. In fact, I don't believe you will find a guide who will make the trip, as it's too dangerous!"

This was rather discouraging to one who had found consolation for several months in the thought of enjoying the view from the summit of Shasta, and who had traveled nearly five hundred miles to climb the mountain. The nearer we got to the mountain the more completely it filled the eye and satisfied the imagination. Even the Castle Rocks, picturesque as they are and full of romantic suggestions, are dwarfed when this great mountain appears. Soon the train reaches the beautiful Strawberry Valley and pulls up at Sisson, which is exactly at the foot of the mountain. The town itself is a shambling lumber town. Its main street is lined with grog-shops and hurdy-gurdy halls. In summer it is redolent of sawdust and freshly cut lumber; in winter idle men crowd its saloons, and coarse vice shows its unlovely features.

Back of the town on a slight elevation stands the old hotel of hunter Sisson, from which one gets the finest view of the mountain. It would take the pen of Ruskin to do justice to Shasta. Like El Capitan or the South Dome in Yosemite it is unique, set apart from all other great masses of stone. No rival uplifts its head for more than fifty miles. It springs from the valley far below, rising so gradually that for miles the ascent is so gentle as to be scarcely perceptible. Unlike the peaks that encircle the Yosemite, it has no lofty mountain plateaus about it to dwarf its height and rob it of its full impressiveness. For half its height of 14,440 feet it is wholly free of timber, its outlines cut as clearly against the sky as the finest strokes of the etcher's needle. Through its mantle of snow its gaunt ribs show here and there, while, at times, when the fierce north wind blows, Shasta flings a snow banner far out to the south, light and fleecy as clouds after a summer shower. Below the snow line comes a stretch of volcanic, brown rock, and then the woods begin,—stunted pine and fir, then noble sugar pine and cedar, and then a dense growth of chaparral that comes down to the valley.

After thoroughly enjoying my first view of Shasta I set about getting a guide for climbing the mountain. Although it was late in the season it seemed to me that any one accustomed to the mountain would have no hesitation in making the ascent. But when I approached the guide who had been regularly in charge of tourist parties during the season he declared flatly that he couldn't and wouldn't go for any price. His main excuse was that he was building a house, and was anxious to complete it; but he revealed the real reason when he said that the snow was too deep on the summit, and that it was so cold up there one would freeze to death. Then others were



Mount Shasta from the Uplands.

sought with no better success. Having traveled so far to climb this mountain I was now determined to make the ascent if I had to go alone; but good fortune threw me in the way of John Sulloway, an old mountaineer and stage driver, who now keeps a livery stable at Sisson. John was a good mountain climber in his day, having assisted Clarence King in his work in the high Sierra; but without any preliminary training he did not feel equal to a trip up Shasta, with what looked like heavy snow on the ground. So he took me in his cart to one of the mills near town, and there I secured the services of Lew Gordon, who had hunted over the mountains for years and who had guided several parties to the summit. Gordon looked what he proved to be,—a man of exceptional strength and endurance, very deft of hand in improvising ways out of difficulties, and fertile in resource. We secured three horses and a camping outfit of Sisson. The outfit was all right except the horses. Two were so weak and poor, being taken directly from pasture, that they well-nigh gave out the first afternoon, crawling at a snail's pace over the trail. The pack-animal was the strongest and surest-footed of the three, and its instinct in following a trail proved of real service.

We started about noon. The day was sunny and warm, but clouds were flying over Shasta, and the signs indicated a storm within a few days. However, the risk of a snow squall on the summit had to be taken, as my stay was limited. As soon as we plunged into the trail east of the town, we lost all sight of the mountain. This trail wound for several miles through dense chaparral of manzanita, chincopin, wild cherry and deerbrush. The manzanita was particularly thick along the trail, and its strong branches continually swept against one's legs. After about two miles an open space in the woods gave a fine view of Castle Rocks and the lake which mirror's their crags. The whole of the beautiful Strawberry Valley was spread like a map below. With the river winding through it, and clumps of oak and pine dotting the greensward, the valley bore a strong resemblance to bits of country in Western New York or Ohio. After passing through the chaparral we came to fine woods of pine,—sugar and yellow,—spruce, fir and cedar, while above this the growth was almost wholly silver fir.

Soon we reached a wilderness of bowlders and rocks, piled in the most fantastic shapes. This is called the Devil's Kitchen. The rocks all bear evidence of strong volcanic action; they are granite, browned and calcined by fire; nothing but a few stunted and gnarled trees grow in this abomination of desolation, which even the birds shun. The higher we went up on the trail, the scantier became the vegetation, until at last only a few storm-beaten pines were to be seen, their trunks bent like the backs of aged men, and gnarled and twisted by their hard fight for life with wind and frost.

About five o'clock in the afternoon we reached the camping ground, ten miles from Sisson and about six miles from the summit of Shasta. The camp is sheltered by several large trees, but it is defective in having no water within a quarter of a mile. Here Gordon gave the horses a feed, and we soon had a good fire and cooked a meal, that the sharp mountain air made one relish. The mountain looked very near and very cold. As the shades of night settled over its snowy summit, the long slopes of driven snow appeared drear and forbidding. Yet the mountain fascinated one by its air of mystery, and the eye returned to it again and again, eager to penetrate the secrets that it held. The sunset was noble; the west was barred with long lines of living flame which melted into crimson and golden yellow; and then, when the great ball of fire dropped far below the horizon, settled into that leaden ashy hue that

shows the defeat of the old day in its contest with the powers of darkness. The atmosphere was too full of smoke to make the sunset impressive on Shasta. The snow took on a tinge of purplish red. The black buttresses of rock that stood out like the keel of some mighty ship seen in a froth of waters were softened in outline. Then night came swiftly down and hung out its innumerable lights. The moon did not rise till after midnight, and the darkness was so great that the outlines of the horses could scarcely be made out thirty feet away. Wrapped in blankets, we lay before the cheerful fire until half-past nine o'clock, when Gordon decided it would be safest to start on our climb if we would see the sunrise on the summit. His theory was that, should we find the ascent less difficult than we anticipated, we could rest at the hot springs near the summit until the sun came up. His good judgment was proved by the result, for we spent eight hours in the ascent and reached only the southern spur of the mountain, called the black rocks, when the sun rose. Had we delayed starting till midnight, we should have missed the finest spectacle that Shasta can furnish. Gordon also showed wisdom in carrying a pair of blankets strapped

Cutting a Path Up the Ice Cliff.

to his back. Without these we should certainly have frozen hands or feet, and without the warmth which my blanket gave it is very doubtful whether I should ever have reached the summit.

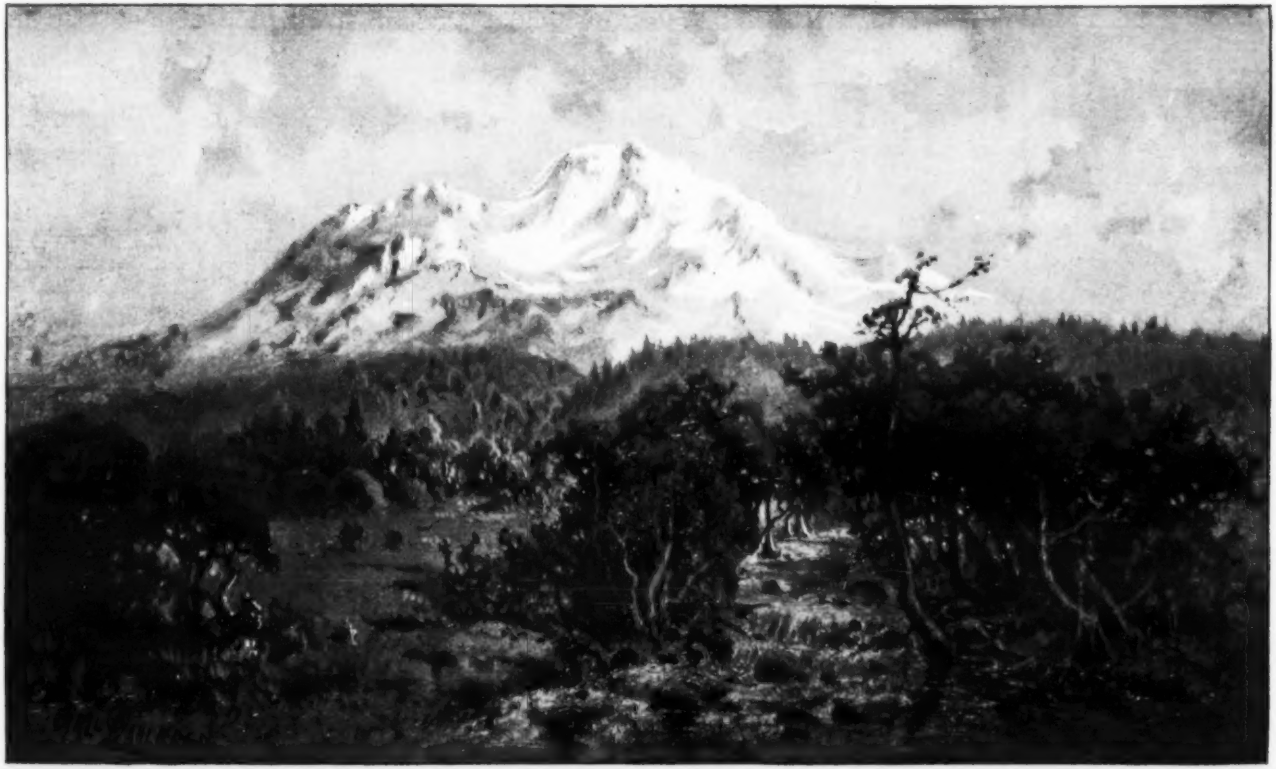
My dress was a good one for such a trip. Over an ordinary tennis flannel shirt I wore the heaviest blue flannel shirt which I could buy in Sisson. Overalls covered trousers, leather leggins protected the lower limbs, and nails in heel and toe of stout shoes gave one firm footing on the ice. We carried several gunny-sacks to wrap about our feet should the snow prove deep.

We were able to ride for about half the way to what is known as the horse-camp, just on the edge of the snow. Probably if we had trusted to the instinct of the old pack-animal we could have ridden the whole distance. But the night was so dark that no trail could be detected, and Gordon at last concluded that the veteran had become bewildered. So we tied the three animals in the shelter of an immense bowlder, and leaving them some feed struck out on foot. We clambered over the loose rocks, through the inky darkness, until at last we reached the horse-camp on the edge of the great snow-field. The reflection from the snow gave a faint light, and, of course, all that had to be done was to shape as good a course as possible to the red rocks, great landmarks just below the summit. Gordon was rejoiced to find that there was a crust on the snow which would bear us up, and we made rapid progress across the smooth expanse.

On our right was a high rocky ridge that was nearly covered with snow. On the left the Whitney glacier that looked very dark, cold and forbidding in the half-light. Soon we struck softer snow, and the ascent became more laborious. Instead of the piercing cold which we expected the air was soft and mild; for the whole mass of the mountain protected us against the north wind. For three hours we made good time. Then the difficulties began. We had made a little more than half the distance to the red rocks, when we began to encounter smooth slopes of hard snow as steep as the roof of a house and as slippery as ice. Gordon was able to make footsteps for a time by stamping with his heels, but at last the snow became genuine ice, and then he had recourse to the pick.

Step after step, for over half a mile, had to be cut in the smooth surface of this great mass of ice. It was laborious work, and even with the aid of the alpenstock it was dangerous; for a slip or a misstep would have meant a fall of at least two thousand feet down upon the jagged rocks which formed the upper edge of the glacier. Once started, nothing could have saved one from the full descent; for the alpenstock cannot be buried deep enough in the ice to check a fall. The air began to be perceptibly thinner as we neared the red rocks that mark the point beyond which many climbers never pass. It was about three o'clock in the morning when we reached these rocks; and after taking a drink of tea from the canteen we set our faces for the final climb to the mountain top. An occasional gust of icy wind showed what we might expect when we emerged from shelter. This last hour of climbing was very laborious and exhausting. We skirted the southern ridge of the mountain, passing along the edge of icy precipices; and just as the eastern sky began to flush with a dull red we reached the black rocks, a coigne of vantage almost equal to the summit for a superb view of the east, south and west.

Here, for the first time, we felt the full force of the cold wind from the north. It came over leagues of snow, and was so deadly cold that it seemed to penetrate to the marrow. It made Gordon's teeth chatter, while upon me, fresh from the heat of the Colorado desert, it had the effect of benumbing my faculties and paralyzing my energy. The precious blankets were brought out, and with our backs to the bitter wind we broke our fast

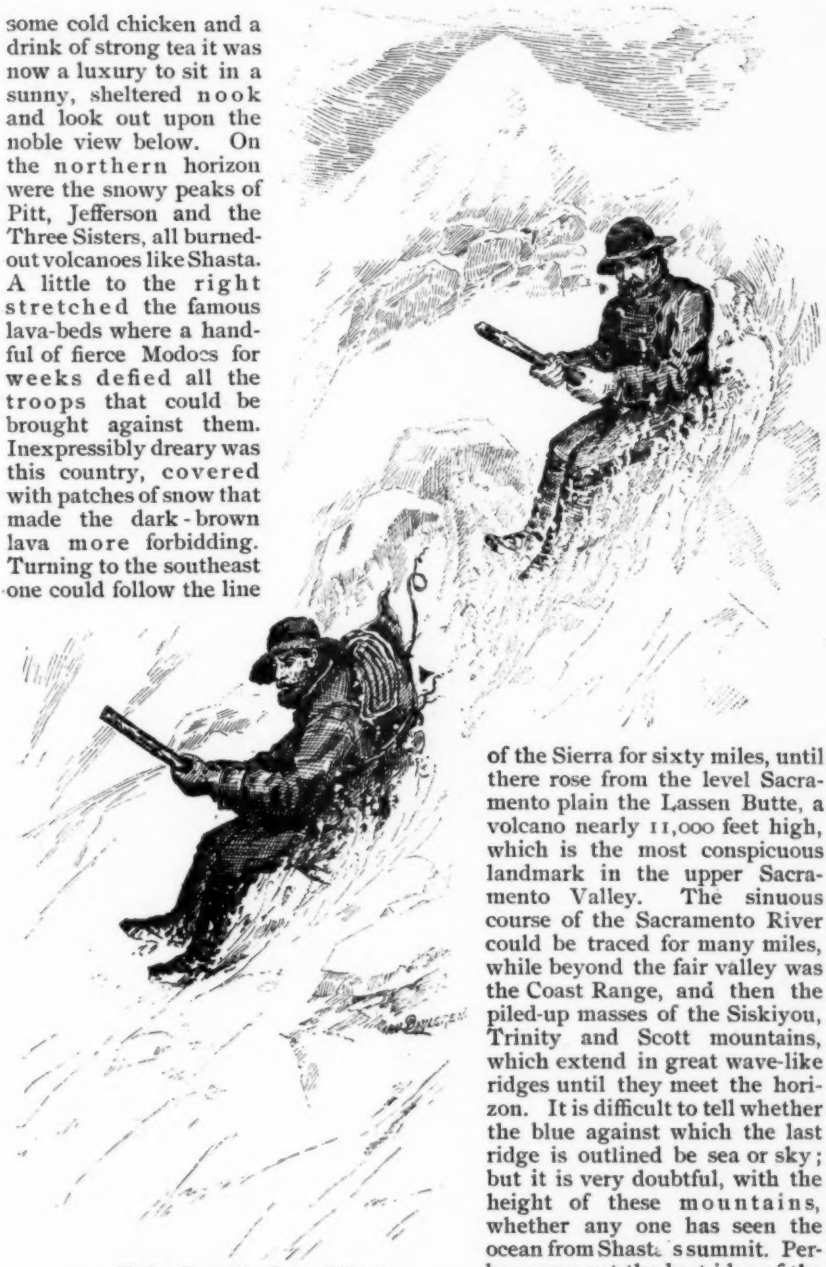


Mount Shasta.

and watched the sun rise. Even the misery of extreme cold did not prevent me from enjoying this superb spectacle. The sky was beautifully clear, except near the horizon, where clouds were massed in huge bars. These took on the various tints, — leaden gray, pearl, rose and deep crimson, — which heralded the approach of the sun. As each color appeared on these cloud-strata, the reflection moved like a great shadow over the sleeping world below; but, unlike a shadow, it served to reveal mountain tops, wooded hills, level valleys and streams. Then the long colored rays of light seemed to leap up like a flash to the snowy flanks of Shasta, which were soon all aglow under the flush of dawn. Nothing more impressive could be conceived than this awakening of the snow-shrouded mountains to a new day. The vastness of this expanse of mountainous ridges, looking like a storm-tossed ocean suddenly turned to stone, the awful desolation that surrounded me, the sense of loneliness, the feeling of remoteness from the world, — all these emotions crowded upon one's mind and brought tears to the eyes. Though the advent of the sun carried life and warmth to the valleys, of which we could catch glimpses through the haze, it seemed to have no effect on Shasta. The wind was as penetrating as before; and, though scarcely able to drag one foot after the other, I set out to follow Gordon to the summit. After leaving the Peak, we struck a hollow in which the snow lay deep. The crust would not bear one's weight, and at every step we sank to the waist. The labor of crossing this dreadful hollow was something which it is not pleasant to recall. The rarefied air made me pant, as though I had been running a foot-race. Every hundred yards it was necessary to stop, lean on my alpen-stock, and take a rest. Only by the greatest exertion of will power could the benumbed and nearly exhausted body be made to move. Through all this miserable journey of only a short half mile or more, my mind was firmly fixed on reaching the summit, if it took all day to do it; but the sensation of being thwarted by the unwilling body was something strange and unpleasant. It was as though the brain were outside the body, urging it on, and impatient of its weakness and sloth. At last I reached the hot springs, which are in a hollow just below the summit; and though the odor of sulphur was very unpleasant the warmth was invigorating. These springs form one of the most peculiar features of Shasta. Out of a patch of ground of about half an acre come jets of steam. The rock is heated so that it burns through the shoes. In many places the steam bubbles through a number of small holes, lifting the loose rock precisely as pent-up steam lifts the cover of a tea-kettle. The smell is the disagreeable odor of sulphureted hydrogen, and the gases are so pungent as to give many persons nausea of the stomach. This seething pent-hole of fierce interior fires is surrounded by snow-fields that cover the burned-out craters of this old volcano; for Shasta at one time, from all geologic evidence, was in active eruption. Among these hot springs John Muir found refuge when he and a companion were overtaken on the summit by a great snowstorm.

After a short stay at the springs we set out for the summit. Gordon easily outstripped me, for the rarefied air again made progress slow for me. A scramble up a steep hill of loose stones, and the summit was reached at last. It is crowned by the geodetic monument erected by the Government to aid the coast survey in triangulation. This monument is not impressive, as it bears a striking resemblance to a huge fire-cracker. It is made of galvanized iron, and upon the paint that once covered it have been scrawled the names of hundreds who have climbed the mountain. Just below the monument the best general view was obtained. The air was as clear as fine wine; and refreshed with

some cold chicken and a drink of strong tea it was now a luxury to sit in a sunny, sheltered nook and look out upon the noble view below. On the northern horizon were the snowy peaks of Pitt, Jefferson and the Three Sisters, all burned-out volcanoes like Shasta. A little to the right stretched the famous lava-beds where a handful of fierce Modocs for weeks defied all the troops that could be brought against them. Inexpressibly dreary was this country, covered with patches of snow that made the dark-brown lava more forbidding. Turning to the southeast one could follow the line



Sliding Down the Face of Shasta.

of the Sierra for sixty miles, until there rose from the level Sacramento plain the Lassen Butte, a volcano nearly 11,000 feet high, which is the most conspicuous landmark in the upper Sacramento Valley. The sinuous course of the Sacramento River could be traced for many miles, while beyond the fair valley was the Coast Range, and then the piled-up masses of the Siskiyou, Trinity and Scott mountains, which extend in great wave-like ridges until they meet the horizon. It is difficult to tell whether the blue against which the last ridge is outlined be sea or sky; but it is very doubtful, with the height of these mountains, whether any one has seen the ocean from Shasta's summit. Perhaps you get the best idea of the

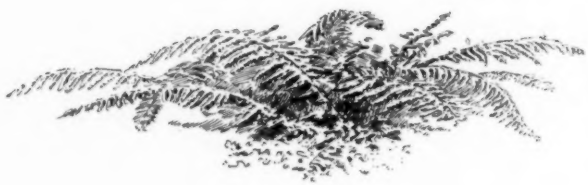
great elevation of Shasta from a careful study of the little valleys at the foot of the mountain. Big ranches with thousands of head of cattle look no larger than a square on a checker-board, and a river shrinks to a mere silver thread.

The descent of the mountain was far more laborious than usual, because we dared not risk sliding down by the same way we had climbed up. In the first place there were too many jagged rocks in the way, and again, no one could steer a sure course over the icy surface of the great snow-field. Any deflection from the true course would carry one far down into the glacier, which would mean serious injury or death. So we were forced to keep along the high ridge below the southern peak, climbing over the loose rocks and occasionally floundering through the deep snow. When about half way down we reached a point from which it was safe to slide. Seated on a gunny-sack, grasping the alpenstock firmly between your knees and steering a course with the feet, you go down over the smooth snow with the speed of the wind. The rush of the keen air fairly takes away the breath, but the sensation is delightful; for this is probably as near to the motion of a bird on the wing as one may reach until the invention of the flying machine.

The descent was not without its element of hazard; for at frequent intervals great masses of rock came crashing down over the snow from the northern ridge. The warm sunshine evidently loosened these rocks, which came thundering down the mountain.

About four hours were consumed in the descent. We reached the horses soon after mid-day, and a little later we were discussing a meal at the old camping ground, looking out on the snowy mountain that had given us so hard a night's work. Shasta seemed lovelier than ever, with the warm sunlight resting on the dazzling snow; but we had made the intimate acquaintance of the mountain, and knew how deadly was that beauty and how deceptive the sunshine on the summit.

The return over the dusty trail was not pleasant. We felt the heat of the foothills after the piercing cold of the mountain air. The horses moved like snails, and it was a great relief when the town was reached once more. It was some satisfaction for danger and hardship endured to be able to disprove the prophets who had declared we could never reach the summit. But for my part if I climb Shasta again it will not be when the mountain is covered with snow. One ascent of the kind which I have tried to describe faithfully is enough for a lifetime.



THE NAVY IN CALIFORNIA.

By Ruthella Schultz Bollard.

COMPARATIVELY few outside of its immediate vicinity, in fact, scarcely any but "navy people," know exactly how the navy yard of the Pacific Coast is situated. There are also, as a matter of course, several other things that only navy people know. None but they, for example, know how important a factor of the body politic navy people are.

But (to return to the subject that at present demands our attention) the ideas of Americans in general as to the location of their own naval establishments are certainly either very vague or altogether erroneous.

Let it be understood, then, that the San Francisco Navy Yard is located on Mare Island; the New York Yard, at Brooklyn; the Philadelphia Yard, on League Island; the Norfolk Yard, at Portsmouth, Va.; the Boston Yard, at Charlestown; that of Portsmouth, Me., at Kittery; while those of Washington and Pensacola are where their names would indicate.

The San Francisco Navy Yard, the only one as yet established on the Pacific Coast, is located on an island which, lying along the eastern side of San Pablo Bay, is separated by a narrow strait from the mainland, and is directly opposite the charmingly situated town of Vallejo.

This island, which is twenty-six miles distant from San Francisco, is two miles and a half long, with an area of about a thousand acres, and an altitude, at the highest point, of 280 feet.

The location is admirably adapted for a naval station, the land-locked harbor having every advantage of accessibility, capacity and depth; while, owing to the influx of fresh water from the San Joaquin, Sacramento and Napa rivers, it can boast immunity from the destructive teredo.

Probably no one hears for the first time the name of the island without question as to its meaning and derivation. Those versed in legendary lore answer with the story of the old white mare.

In "the early days" there was but one ferry-boat on Carquinez Straits and the waters adjacent,—a barge constructed of planks secured to a float made of oil-barrels.

Once upon a time this craft, on its way from Martinez to Benicia, encountered a sudden squall; and it required but a few moments for the terrified animals of which its freight consisted to kick the boat to pieces and betake themselves to the water.

Among those that succeeded in reaching terra-firma was an old white mare belonging to General Vallejo; and the island on which it was found contentedly grazing was named by the General *Isla de Yegua*, or Island of the Mare.

It is probable, however, that some of the early missionaries named it Mare Island, from the Latin *mare*, the sea; just as the region to which it belongs was doubtless named from the Spanish *solano*, the east wind; though General Vallejo states that the county so called was named for Solano, the chief of the Suisuns.

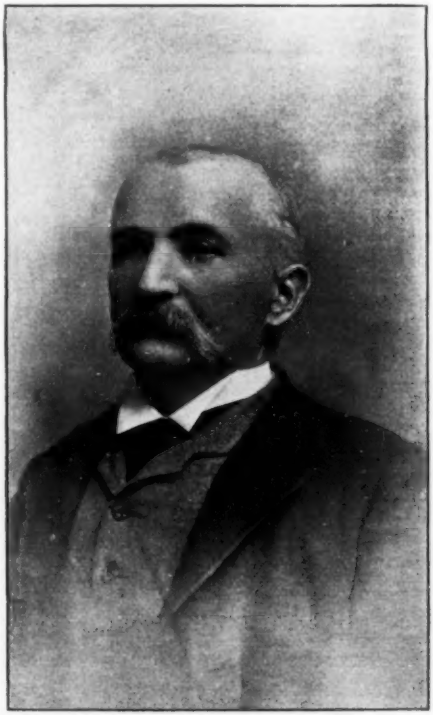
In the year 1850 Mare Island was granted by the Mexican Government to one Castro, who forthwith sold it for the sum of $7,000, the purchasers disposing of it in 1851 at the advanced price of $17,500. Within two years thereafter (January 4, 1853), it was purchased by the United States Government for more than four times the last-named amount, and nearly

twelve times the exorbitant price first paid,—for no less a sum than $83,000!

A further expenditure of $317,000 was required to put the Pacific Coast naval station in simplest working order, mechanics' wages being five and six dollars, while ship-carpenters and caulkers rated as high as nine dollars per diem.

The month following, the astronomers of the Exploring Expedition erected the observatory.

Other buildings then in course of erection or begun soon thereafter were foundry and machine shops; storehouse and workshops of the Department of Construction and Repairs; storehouse and workshops of the Department of Equipment and Repairs; yards, docks and workshops; Bureau of Navigation; store-house, sawmill, bishop-derrick, yard stables, etc.



Admiral John Irwin.

Commander David G. Farragut was the first commandant of the yard, the national flag being first hoisted October 3, 1854.

The sectional dry-dock, built by private enterprise, was the initial step toward the equipment of the yard, the sloop-of-war *Warren* being the first vessel floated in, September 25, 1856.

Since then the office building, commandant's residence, officers' quarters, marine barracks and adjuncts, naval hospital and accessories, magazine reservation and buildings, lighthouse

reservation and buildings, stone dry-dock and buildings, receiving-ship and cemetery reservation, have been severally built or established, forming, together with "Dublin," a cluster of cottages for those employés who cannot be spared to live on the mainland, —a very considerable colony.

ing of numerous vessels, among them the *Charleston* and *San Francisco*, has been witnessed by admiring crowds.

"Mare Island is certainly a paradise for children," was remarked to an officer of high rank who was deploring the mandate of Fate and the Department banishing him (and by consequence his family) to the inclement Atlantic seaboard.

The Corridor of the Pay Office at Mare Island in Winter.

The stone dry-dock, the largest in the New World, constructed at a cost of $2,750,000, was begun in 1872, and has not yet arrived at full completion, some fine finishing work being now on hand. The receiving-ship *Independence* was the first ship floated in, October 30, 1886, since when the dock-

"Mare Island is a paradise for grown people," he answered with the emphasis of strong conviction, —an assertion readily conceded by those familiar with the delightful all-the-year-out-of-door life, the unrestrained

social intercourse, the natural isolation which so effectually promotes the much-desired exclusion of the work-a-day world,—and withal the accessibility of the metropolis, all of which make this one of the most desirable stations in the Department.

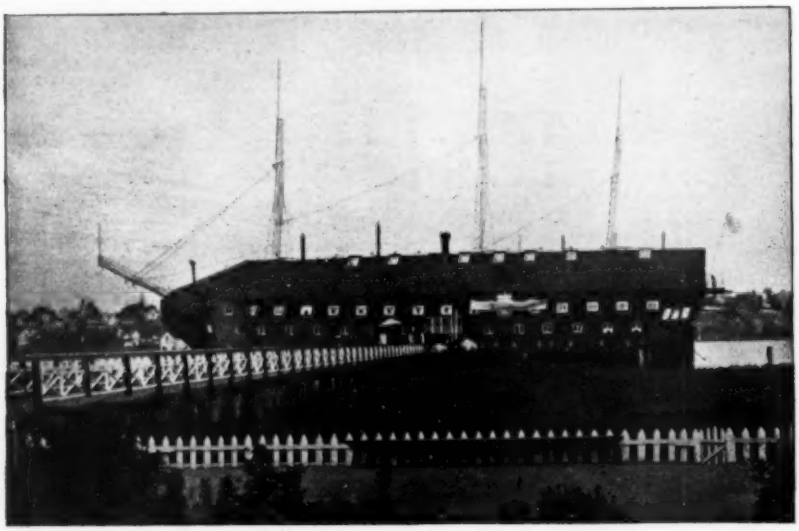
Fancy an emerald isle set in a silver sea, a realm of fairy-land where Uncle Sam (being a good paymaster) is fairy godfather; where in one park you have your lawn-tennis court; in another your croquet-ground, and yonder your bowling-alley; where, of an afternoon,

> In * * * * * * * * a land
> In which it seemeth always afternoon,

you may lounge or promenade or drive or dance—if so you choose—to the music of one of the best-trained bands outside of San Francisco; where you can ride or drive for miles overlooking the summer sea, or with billowy verdure on the one hand, on the other the glory of flower-gardens.

Yet, when all is said, it must be confessed that there is vast room in this paradise for improvement.

Though etiquette constrains the officers of foreign navies who visit Mare Island to speak only in general terms of commendation, it is nevertheless a fact that civilians from foreign lands—even from the English colonies in America—are unanimous in their expressions of disappointment, invariably comparing our naval stations and other Government reservations with their own,—greatly to our disadvantage in point of architecture, landscape gardening and neatness.

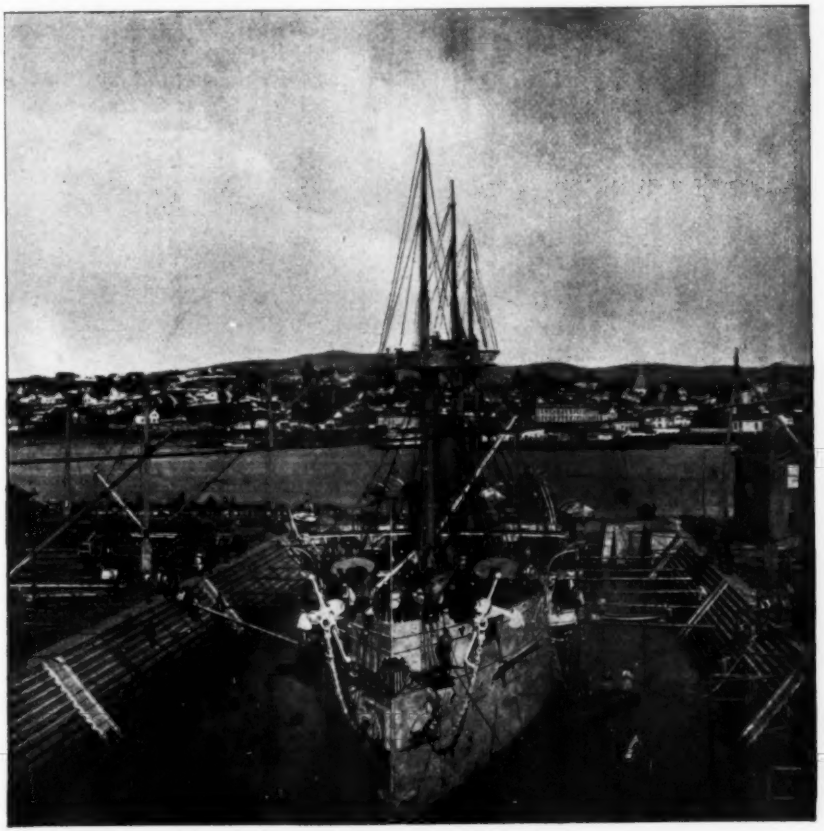


Receiving-Ship "Independence," Mare Island.

It must be said, however, that every year sees some advance in these respects, the administration of each successive commandant being marked by some special line of improvement in accordance with his individual taste and judgment.

But it is when considered as Uncle Sam's workshop that the navy yard is of interest to the greatest number. At times there have been as many as nineteen hundred men employed in the various departments; at present there are about five hundred.

The history of this station has certainly demonstrated the fact that Government works in the neighborhood of a small town are a decided disadvantage,—even a misfortune. They are desirable only in the vicinity of large cities, where numerous and old-established industries make it impossible that the Government works should be regarded by the entire population as the one acceptable place of employment.



The Dry-Dock at Mare Island.

In this instance, the navy yard and Vallejo having grown up together; few industries have been able to gain a foothold in the town. Private enterprise cannot compete with Government works. It is not only the fascination of working for the fairy godfather, but also the substantial advantages of oftentimes larger wages and always shorter hours that make men seek work in "The Yard," notwithstanding the risk—even the probability—of long periods of idleness.

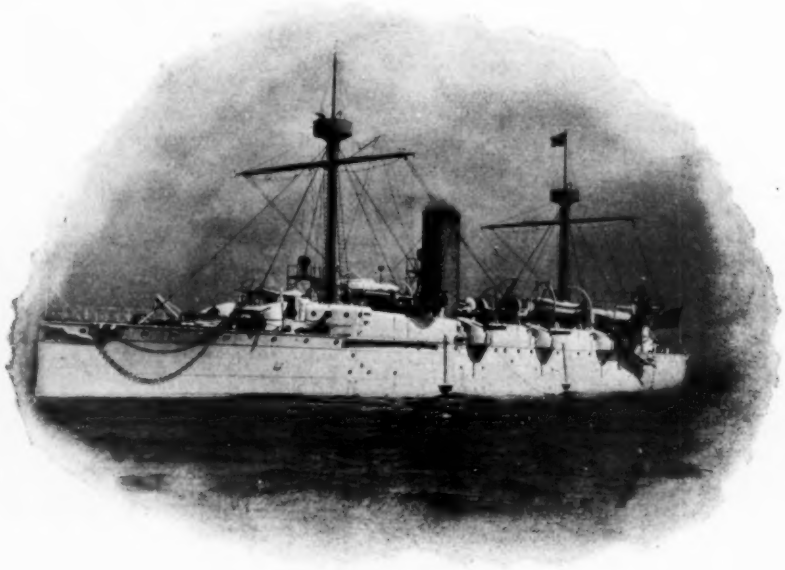
As, however, in the natural course of events an infant outgrows its leading-strings, so Vallejo will doubtless in time outgrow its dependent condition, and learn merely to account the

Government works as one of the many industries within its reach.

Though the commandant of a navy yard can scarcely be styled an autocrat, his rule is sufficiently absolute to justify to some extent the declaration of a well-known commodore who, when the chaplain, without having first consulted the commandant, gave notice of the visitation of the bishop, exclaimed, "I'll have you know, sir, that *I* am bishop of this navy yard!"

earthly paradise for officers, "Uncle Sam's Workshop," the "Saints' (or Sinners') Rest," the nursery of the party in power, or the stamping-ground of politicians,—a phase of the subject on which I forbear to dwell.

Though it must be confessed that nine-tenths of those who have any connection with the navy yard naturally view it in one or another of the lights above named, the fact remains that the vast majority of the Ameri-



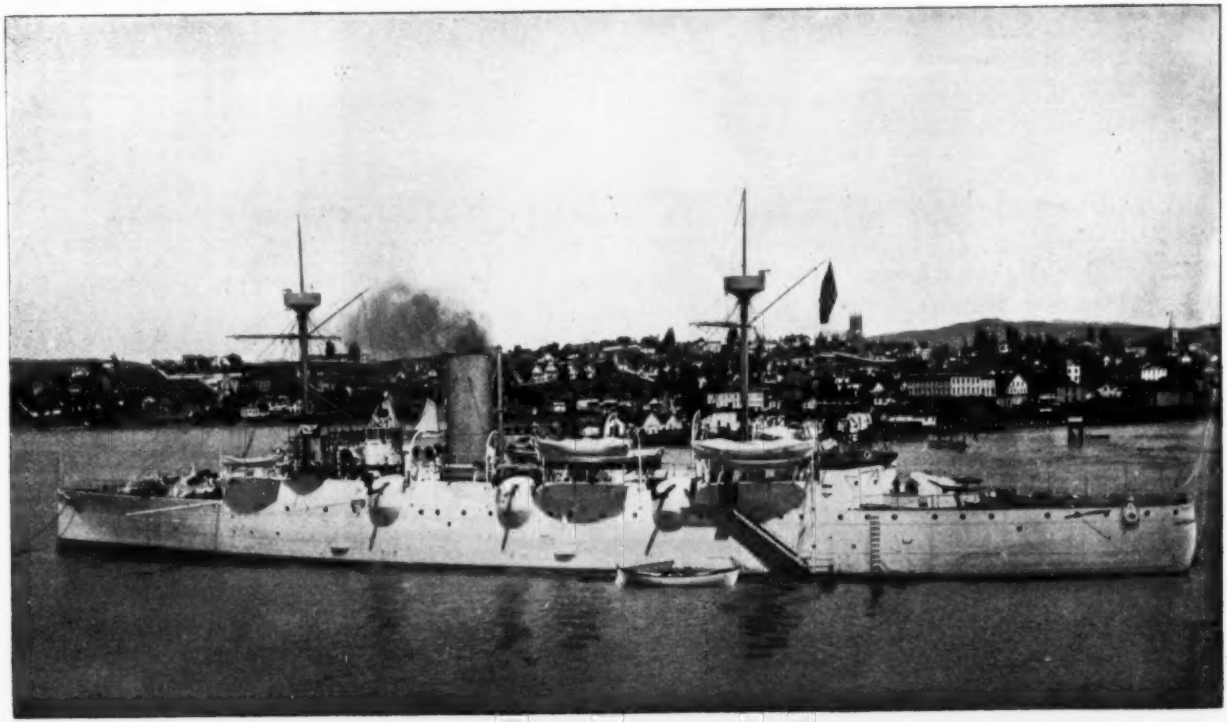
U. S. Cruiser "Charleston."

Certainly in every navy yard the commandant is chief. He and his household strike the key-note of its social life. One administration might be styled "The Gay;" another, "The Intellectual;" another, "The Devout."

Of the present régime it is safe to say that never have smiling Peace and happy-hearted Contentment more graciously adorned this earthly paradise.

It would be absurd, however, to consider the navy yard simply as an

can people are without personal connection, either direct or indirect, with the naval establishment. To one living in the neighborhood of a provincial navy yard it would seem that the whole of America and a large portion of Ireland, Germany, England, Scotland, Italy, France and Greece were striving to impress the American Eagle into the service of each and every individual. While some would fain mount upon his back, others would gladly pick his bones.



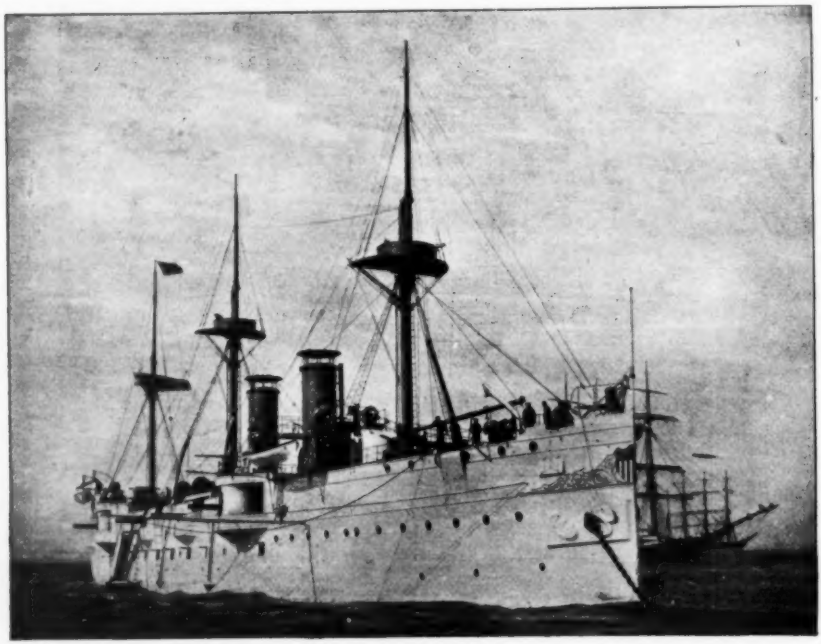
Vallejo and the "Charleston" from Mare Island.

But these multitudes constitute in reality a very insignificant, an almost inappreciable, part of the body politic.

The fact to be considered, and that which it is hoped the Fifty-second Congress will take seriously and effectually into consideration, is that the American people look to the navy for that protection of their interests, that vindication of their rights, and that maintenance of the national honor, courtesy for every American citizen in foreign parts and on the high seas.

What prospects have we of soon realizing these ambitions?

To the mind of that vast majority of the American public which has no connection with, or special understanding of, naval affairs, it is only the number of ships at the command of the Department that conveys any tangible idea of the status of the navy. The



U. S. Cruiser "San Francisco."

which a navy, and a navy alone, is able to afford them.

Events of the past year have not only demonstrated the urgent need of an effective naval establishment, but have also aroused the American people to a strong and unappeasable determination to become a power upon the high seas, to be able to defend their own seaboard, to protect their industries, to command the respect of neighboring nations, to demand justice and secure

numerical strength of our available fleet is, indeed, of prime importance; but equally to be considered are the merits of the respective ships,—their type, rate, armament, etc., not to mention the efficiency of the "service" (by which is meant the personnel of the navy); the equipment of navy yards; the manufacture of ordnance; the improvements in ammunition, etc.

That the number and merits of our ships are of the first importance let

the following from a leading English magazine bear witness:

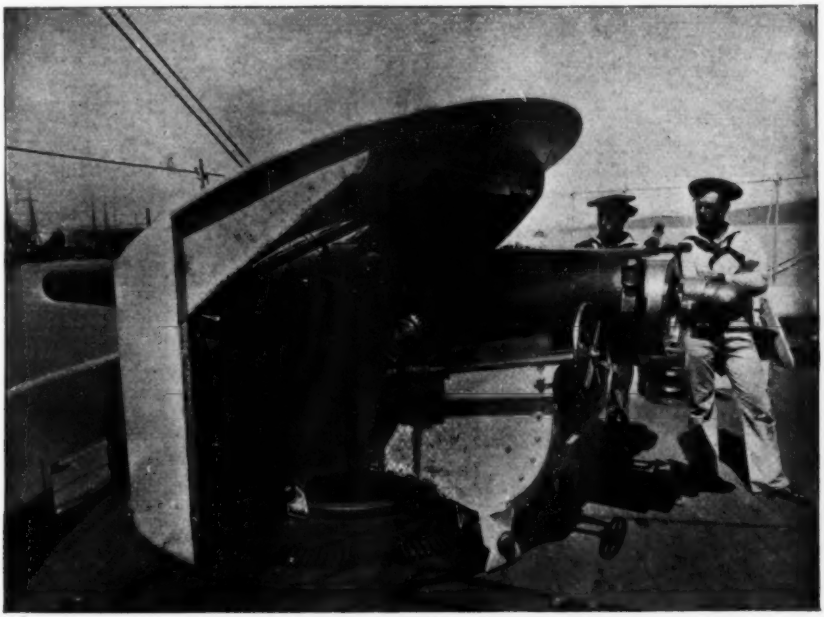
"Every additional war-ship that floats the star-spangled banner at her peak," says the *Review of Reviews*, "increases the urgency of a good understanding that may hereafter ripen into a good working, and, if need be, a fighting, alliance, between the two branches of the English-speaking race in the Western hemisphere."

To our ships, then!

dispatched to the San Francisco *Chronicle*, December 7, 1891:

. . . "The old wooden ships have practically passed out of existence. They no longer count even as a nominal factor in naval defense. The sole reliance of the country to-day for the protection of its exposed seaboard is the new fleet."

Elsewhere Secretary Tracy is quoted as saying that in the course of four years, if present plans are successfully



Gun on Cruiser "San Francisco."

The latest official naval register reports, aside from receiving-ships, school-ships, training-ships, tugs, etc., none of which come within the scope of this article, the magnificent number of sixty-four vessels, including all types now in commission or ready to go into commission at short notice. But I am obliged to add that twenty-one of these compose an array of old wooden ships, concerning which I quote from Secretary Tracy's annual report, as

carried out, the United States will have a navy of creditable efficiency.

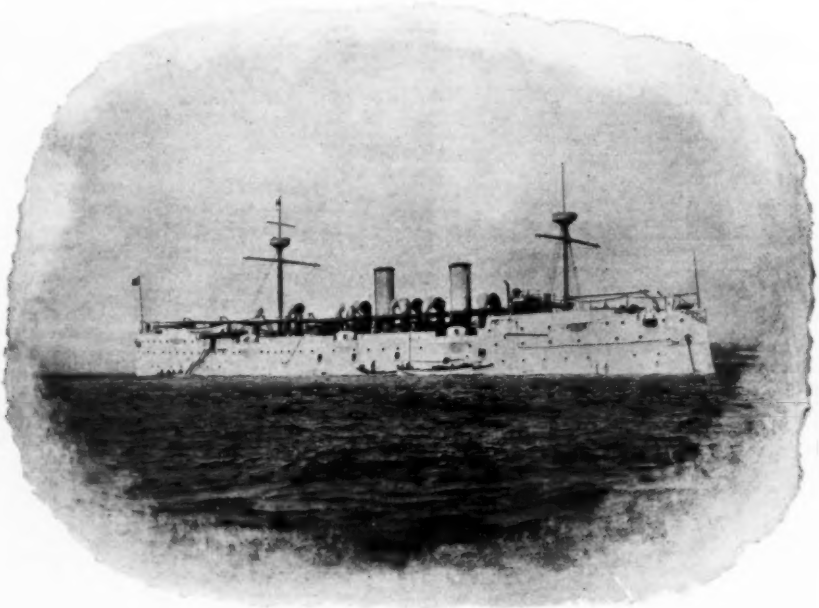
The plans referred to comprise among other matters (such as the establishment of an ordnance factory on the Pacific Coast, the test and manufacture of explosives, the improvement of the service, etc.) the completion of sixteen vessels of various types, each of which is expected to be a model of its kind.

But it takes one's breath away to think of what might happen—what

might not happen!—during those four years. To quote again from the Secretary's report:

"Even with the present authorized fleet, to protect either seaboard will involve stripping the other at a critical moment. If the Nicaragua Canal were completed the strategic situation would be largely modified." (To judge from present prospects, the availability of the canal and that of our new navy are likely to be very nearly contemporaneous.)

"The press of the country, representing the people," continues the Secretary, "does not believe that cities like San Francisco, Seattle and Tacoma should be open to attacks of a third-rate power, whose ships by a sudden movement may enforce contributions that would pay in advance the expense of a war. If any one believes that such rapidity of movement is impossible, let him recall the circumstances under which the *Esmeralda* appeared in April last without warning close to the California coast, sending on the *Itata* to San Diego. As little does public opinion believe that the commercial seaports of the Gulf and Atlantic should be unprotected from an attack by any nation whose fortified harbors and fully equipped dockyards are within forty-eight hours' steaming. It is erroneous to suppose that seacoast States alone have a direct interest in the matter. The prosperity of the whole interior depends upon the uninterrupted supply of the demands of a foreign market. By a blockade of the great outlets the great industries of the interior may be paralyzed."



U. S. Cruiser "Baltimore."

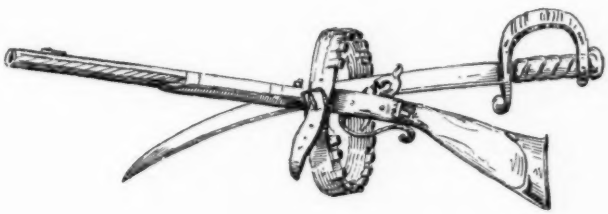
These are serious considerations presented with the force of profound conviction, the dignity of unquestionable authority and the clearness of practical insight.

What are we to do about it?

Let every village newspaper, every great daily, every Fourth-of-July orator, every stump speaker,—above all, every *voter*,—take up the strain and ring the changes on the theme, acting as well as talking, until our representatives take the subject up in earnest, and see to it that no Englishman ever again says, as was said in the *Review of Reviews* for September last:

"There is not an officer in the British navy who is not trained from his childhood to regard the French as the only enemy to be feared on the high seas. No other power possesses a navy worth speaking of. If the French navy did not exist we might dismantle more than half our ironclads."

It is to be hoped that France appreciates the compliment, and that it may be our turn next!



REDEEMING LIGHT.

By Rose Hartwick Thorpe.

THE sun beholds no shadow, for his rays
Dispel the darkness. Wheresoe'er he turns
The glory of his own reflection burns.
Night flees before the splendor of his gaze.

He smiles, and all the universe smiles back.
His warmth, far reaching, touches hidden springs
Of dormant good; and myriad growing things
Expand and blossom in his shining track.

With lance of light he pierces all the glooms;
His kisses speed the snow-bound blossom's birth.
Thus *Love*, supreme, transcendent light of earth,
Touches the heart, and it expands and blooms.

MEN OF THE DAY.

By James R. Armstrong.

CAPTAIN WILLIAM L. MERRY, whose earnest and able advocacy of the Nicaragua Canal project has brought him very prominently before the Western public of late years, is a New Yorker by birth; although, coming to San Francisco as early as 1850, he has been so closely identified with its growth that California claims him as one of the foremost among her pioneer sons.

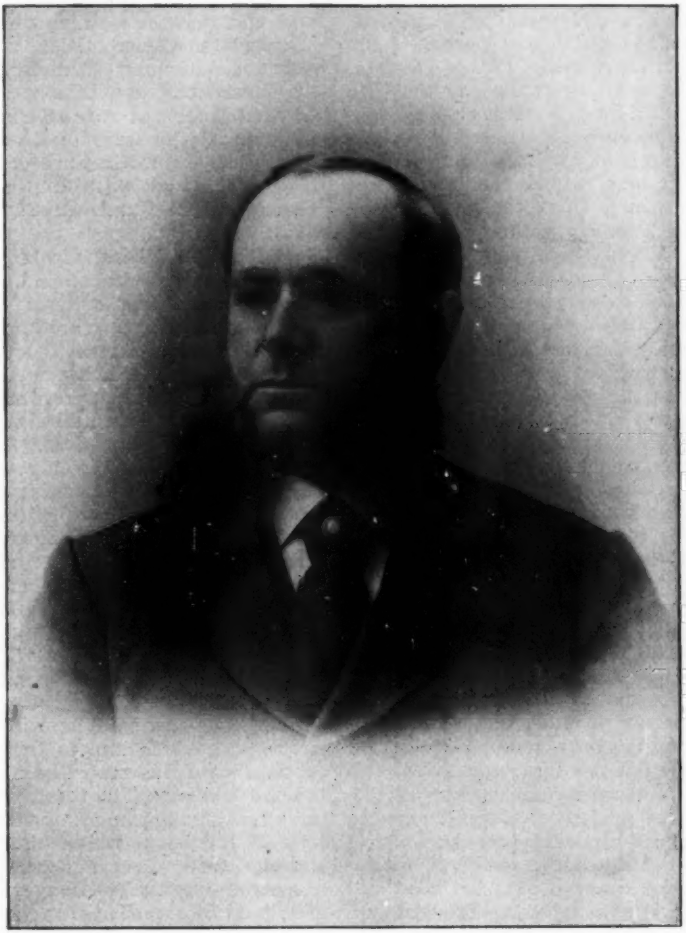
Sixteen years of his early life were passed in sea-faring in the California, China and European trade. Seven times he has made the trip around Cape Horn; five times the voyage around the Cape of Good Hope; and three times he has circumnavigated the globe. At different periods of his career he has been the commander of such well-known steamships as the *America*, the *Arago*, the *Fulton*, the *Dakota*, the *Nebraska*, and the *Montana*, plying between New York and San Francisco in the Central American trade. Captain Merry lived in Nicaragua and Panama for four years, acting as the agent of the New York transportation companies. It was the close study he made during this period of the international commercial relations that makes him now an acknowledged authority on all subjects pertaining to the economics of transportation.

Since the year of 1880, Captain Merry has been a most persistent advocate of the building of the Nicaragua Canal. When he first began to push it, the Panama Canal scheme was before the public mind; and this other canal received but little encouragement. When Ferdinand de Lesseps visited San Francisco in 1880, to canvass for funds for the Panama Canal, Captain Merry, in an able address before the Canal Committee of the San Francisco Board of Trade, and in the presence of De Lesseps, plainly stated it as his opinion that no price on earth that commerce could afford to pay would ever make the Panama Canal scheme a success, for the reason that it was constructed according to an engineering impossibility. Subsequent events proved the soundness of his arguments as regards both Panama and Nicaragua.

In 1869 Captain Merry resigned from the Pacific Mail Steamship Company, and entered into mercantile life in San Francisco. For two terms he served as a Director in the San Francisco Board of Trade; he is also in the Merchants' Exchange of San Francisco, the Californian Immigration Association, the Garfield Monument Association, and other civil, scientific and benevolent societies.

While the Captain is a man of quiet domestic tastes, yet his pride of citizenship is so great that he exerts himself to the utmost to further all movements that tend to the upbuilding of the State and the community. His career has been such that he is universally respected, beloved, honored and deferred to; and few public movements are carried on without his generous aid.

There is no subject before the people of California to-day of so great importance as the proposed canal; and it speaks well for its success that such men as Captain Merry and others are giving it their strong and hearty support. It means new commercial blood infused into this Coast, an era of prosperity little appreciated at the present day; and, if the designs of the subject of this sketch are carried out, the harbors of this Coast will take on a new meaning, and the coasters of the East will bring the produce of the Atlantic to our very doors and return laden with our productions.



WILLIAM LAWRENCE MERRY,
Consul-General, Republic of Nicaragua.

THE ESCAPE OF PRESIDENT DIAZ.

By Andrew Brown.

IN June, 1876, Alejandro K. Coney, now Consul-General of Mexico at San Francisco, was purser of the American steamship *City of Havana*. On the morning of the day that she was to sail for Vera Cruz, two passengers came on board, one an American and the other a very large and peculiar-looking man, who immediately went to his room. Up to the arrival of the ship at Tampico nothing was seen of him. When the *Havana* arrived at Tampico a large number of troops had to be taken on board. They had marched from Icamole, where they had defeated General Diaz after a desperate struggle.

When the steamer arrived a heavy storm was blowing; and only a portion of the troops and some of the officers managed to get on board. The vessel was forced to wait until she could secure the balance of the troops. As soon as some of the officers came on board, the large gentleman referred to came out of his room naked and dived overboard, attempting to swim to some brigs that were lying about five miles off. The cry of "man overboard" was raised. A boat was lowered, and the man, being an exceptional swimmer, was with much difficulty picked up. As the boat came alongside the gangway of the ship some of the soldiers on board recognized him as General Diaz. A lady passenger, who also recognized him, with great presence of mind ran down the gangway with a sheet and threw it over his head and body as he was being brought up, thus preventing him from being further recognized. Purser Coney was immediately notified, and went in to see him. Finding him very much exhausted he gave him some stimulants and left. A short time afterward the Mexican mail agent, Mr. Manuel Gutierrez Zamora, now the Consul at New Orleans, went to Mr. Coney and told him that the man who had been rescued was General Diaz, who had served his country so nobly against the invasion of the French, and that he wanted Mr. Coney to save him from the troops, who were anxious to capture him. In furtherance of this he took Mr. Coney with him into the General's room, and introduced him and then retired.

When alone Diaz, for it was he, raised himself up in bed and gave the purser the hailing sign of distress, showing that he was a brother Mason, and asked his assistance. Mr. Coney told him that there was an American man-of-war in sight that would soon be up, and that he would ask the captain to take him on board. Diaz replied that he had no hopes of the American man-of-war taking him on board; that he would rather trust himself to him, if he would consent to aid him. Mr. Coney said that he would let him know as soon as he had spoken with the officer who would come on board for his dispatches. To this Diaz agreed

When Coney left the General's room the colonel of the regiment, who had come on board, said he wished the purser to go with him to the captain of the ship, as he wanted him to act as his interpreter. The result was a demand upon the captain for the delivery of the man, whom the colonel claimed to be General Diaz, but who appeared on the passenger list as Dr. de la Boza. The American captain replied that the passenger was booked for Tuxpan, and that when he went down the ladder to leave the ship he could see him; but he forbade the purser issuing a ticket for any further point. The colonel then asked that he be allowed to station sentries at the General's door. The captain

consented to this; but in translating his answer Mr. Coney purposely made a mistake, and told him that he could place no sentries at the door, but if he chose to do so he could station an officer at the stern of the vessel so that he could command a view of the room occupied by the suspect. The colonel was satisfied and went out, when the captain turned to the purser and gave strict orders for him to let no one interfere in any way with the passenger supposed to be General Diaz.

A little while afterward the lieutenant of the man-of-war came on board for dispatches; and the purser placed the case before him. The latter immediately went back to his vessel, leaving his steward on board so as to give him a pretext to send back a boat without exciting suspicion. In about half an hour the boat came back with a report from the Captain of the man-of-war, which was, 1st: Has the man in question committed any crime; 2d: Is he an American citizen; 3d: If the captain of the *Havana* will enter into correspondence on the subject, I will take it under consideration. As General Diaz was not an American citizen, as he had committed a political crime, and as the captain absolutely refused to have anything to do with the matter, the idea of intervention by the American man-of-war was ended.

Mr. Coney, whose sympathies were now fully aroused, went to the room of General Diaz and told him of the affair. The General smiled and reminded the purser that he had foretold the result, and asked him what he intended to do. Mr. Coney told him that if he had the nerve to undergo some hardships and privations he would take him into his own room and hide him in a wardrobe, explaining that on board of ships people always hunt in the engine-room or coal-bunkers, these being the very first spots searched, and that the secret would then not be in his hands only, but in those of some twenty other people,—engineers, oilers, etc.,—who would know his hiding-place. To this Diaz replied that his motto was "*fortuna audax juvat.*"

The future President was suffering intensely from dysentery, with high fever; and Mr. Coney's first care was to get him in condition to be moved. Mr. Zamora, the mail agent, the American doctor and Mr. Coney, now kept strict watch at the door, insisting that the passenger's name was Dr. Boza, not General Diaz. The General was given large doses of laudanum, which resulted in checking the dysentery. During the two days that the steamer lay off Tampico the purser carried, piecemeal, part of his clothing to the prisoner. On the third day the barometer began to rise; and the purser knew they would leave on the following day. He made up his mind that on that night he would have to remove Diaz from his room into his own. He told him so, and further requested him to be dressed in the clothes he carried him, and to leave his own clothes in a heap in a corner. He had instructed the American doctor, who accompanied him and who really was his aid-de-camp, to throw a life preserver overboard, the intention being to convey the idea that the General had jumped overboard again, but this time with a life preserver. No one but Diaz and Coney knew of the intended place of concealment; and even the mail agent, Mr. Zamora, supposed he had jumped overboard with a life preserver.

The night was a very stormy one,—a terrible norther blowing, accompanied by heavy squalls of rain; and the Mexican officer on duty at the stern of the vessel to watch the supposed Diaz would invariably run to the lee side for protection whenever a gust of rain and wind would come up. The General's room was away aft, while the purser's room was adjoining the pilot-house forward. It was necessary then to take him out of his room unseen by the sentry or any one. At eleven o'clock that night the purser made his rounds, watching the officers of the regiment. The superior ones

were in their staterooms in bed, some of the others in the social hall, and others in the smoking-room playing monte. As he went the rounds he watched the officer on duty as sentry, calculating the time it took him to run from his post to the place of protection, and made up his mind that he had plenty of time to get the General out of his room without being seen. At about half past twelve o'clock he thrust his hand into the General's room, caught him by the arm, and drew him out while the officer was running from his post to the shelter. The purser shaded the light with his body until he got the General to his room, where he immediately placed him in his wardrobe, which was so narrow that he could neither stand up nor sit down, but was obliged to remain in an awkward, cramped position.

Coney immediately went out to hunt up the American doctor, and found him in the smoking-room. Lighting a cigar, and making a motion for him to come out, he told him he had gotten the man away, and for him to throw the life preserver overboard, letting someone else discover the fact of the absence of the General, find his clothes and the loss of the life preserver, and for him to stay in bed until

President Diaz of Mexico.

that was done, all of which he did. On retiring Mr. Coney took the General out of the wardrobe and bade him lie down upon his bed, suggesting that he needed some sleep; but Diaz could not sleep. They then consulted regarding a plan of action, deciding that once they agreed to do a thing he would carry it out, obeying Coney implicitly in everything. At about four o'clock that morning Diaz insisted upon going into the wardrobe, leaving the purser to undress and go to bed.

At about seven o'clock Coney was awakened by a loud knock at his stateroom door. His servant spoke through the lattice blinds, saying that the officers of the regiment wanted to speak with him. Coney told him to put his hand through the window, open the door, and to let them in. When they entered they found the purser undressed and in bed, with unmistakable signs of a man just awaking from slumber. The officers were greatly excited, and told him that the man had jumped overboard again in the night, with a life preserver. Coney affected great surprise, and expressed very considerable doubt as to his having jumped overboard, insisting that he was still on board the ship; and he offered, if they would excuse him a moment, to get up and dress and hunt for him. Hurriedly dressing himself while they were in the room, he took them out, down in into the engine-room and coal-bunkers, and made them do the searching until they were heartily tired and sick of it and insisted upon giving it up, then he would find some other place to look into, until finally they gave it up from sheer fatigue, being satisfied that he had nothing to do with the escape of the "Crazy Doctor," as the purser always insisted upon calling him.

The greatest difficulty now was to get food to the General. As the purser was not accustomed to have his meals served in his room he did not dare to have any sent to him; and all Diaz got to eat during the two or three days that he was in the wardrobe was what Coney could take unnoticed from the table at meal time; yet he never expressed a feeling of fear, nor ever complained or gave any sign of impatience. The place where he was confined was so small that he could not move with comfort; and on account of the soldiers probing through the lattice blinds, with their bayonets, to see if they could steal some of the purser's clothing, the General ran great risk of losing an eye or having his hiding-place revealed. That night, as soon as the purser could get to his room, which was about eleven o'clock, he took the General out of the wardrobe and had him lie upon his bed, while he kept guard until morning. Diaz then returned to his hiding-place; and the purser undressed and went to bed, sleeping for an hour. The difficulty of this concealment can be imagined when it is known that the vessel was a small one, with nine hundred soldiers with their women on board; so that it was almost impossible to move about the decks.

The night before the arrival at Vera Cruz, the colonel of the regiment called Coney to his room, saying that he wished to speak to him. He went, and a sentinel was placed at the door so that they should not be interrupted. The colonel then said that while he was grateful for all the kindness he had extended him and his soldiers during the trip, he was sorry to see so bright a young man exposed to the danger of being shot; and the fact that it would be better to sacrifice one man's life rather than one hundred thousand. He appealed to his sense of humanity and to his self-interest to reveal the hiding-place of General Diaz, or tell him whether it was really the General or the "Crazy Doctor." He said that, if he did not, he would certainly lose his life, and that in the civil war which would follow the escape of the General many lives would be sacrificed.

Coney listened patiently until he had finished, and then said in effect:

"Colonel, you know as well as I that it was General Diaz and not the 'Crazy Doctor;' and if you had known how to do your duty he never could have escaped. You have nine hundred armed men on board. The ship has a crew of but fifty-two. It would have been an easy matter for you to have taken him prisoner; and your Government would have either given you money satisfaction, or would have saluted the American flag. You would have been praised and promoted; but now he has escaped you. I fear more for your safety than I do for mine."

The colonel blanched, and said, "What shall I do?"

"Why," said the astute purser, "report that it was the 'Crazy Doctor' who jumped overboard with a life preserver. Make a demand for his clothes and property in my possession, and you will come out clear."

The colonel then asked whether he could depend upon Coney, who told him that his interests were at stake, and that that was his guarantee. He also told him to call his officers together and forbid them talking any more about this man, or about his being General Diaz, all of which the colonel did.

Early the following morning the steamer entered Vera Cruz, when the real difficulty began. The purser told the General that inasmuch as he had brought him that far safely he would guarantee to take him to Havana or New York just as well, and that he had better consent. Diaz said no, that his duty called him ashore, and that now or never was the time for him to make the attempt to free his country from the tyranny of the actual Government. He asked Coney if he knew any one on shore with whom he could communicate; and the first name the latter mentioned was that of an intimate friend, now Governor of the State of Vera Cruz, General Enriquez. Coney agreed to communicate with him, and then left to see about the mail; and as soon as it was put up and in slings to go over the side of the vessel he went to Zamora, the mail agent, and never let him leave his side for a moment. The latter's eyes were red and swollen, as he had just heard of the death of his friend, General Diaz, whom he thought had jumped overboard; and he was a picture of distress.

As soon as the health officer reached the side of the ship, and the purser had given him a bill of health, the mail began going over the side into the mail boat. As the health officer came up the steps purser Coney caught hold of Zamora and rushed him down, hurriedly whispering to him, "General Diaz is on board. Tell General Enriquez to send some one immediately." With that he pushed him into the boat, and shoved it off with his foot. Zamora never attempted to get up from where he had fallen, but simply stared at the purser in blank amazement. Arriving at the mole, the first man he met was General Enriquez, to whom he gave the message and sent a lighter-man to the purser immediately with a note, telling him to send the box of arms with the bearer. Coney showed the note to General Diaz; and as it was not in the handwriting of his friend he asked Coney if he knew the man who brought it. The latter replied that he did, and that he could trust him. In the mean time the purser had asked the house-boatman to get him a suit of his clothes, promising that, if he could get the suit within half an hour, he would give him an ounce of gold. In less than half the time he had them there; and General Diaz had them on, and was ready for the last play in the dangerous game.

While the exchange was being made a knock came at the purser's door. Diaz leaped into the wardrobe. The purser opened the door and let the colonel of the regiment in, who said he had been thinking over what Coney had told him the night before, and that, although he was perfectly willing to carry it out, nevertheless he wished to make one more effort,

A. K. CONEY.

Consul-General, Republic of Mexico.

which was that he was authorized to offer purser Coney fifty thousand dollars if he would reveal by sign where General Diaz was concealed. He further stated that he had in his regimental box seventeen or eighteen thousand dollars, and that he would send for the balance ashore, which he could have there in an hour, if Coney consented. Coney could not afford to appear insulted, which he really was; so he simply laughed and told the Colonel that the General had certainly jumped overboard, as he well knew, but added, "Even if I knew I would not tell you." The Colonel then went out, and Coney let the General come out of his hiding-place. He told him how it was arranged with the lighter-man; that he had three hours in which to perfect his plans, and that he could get him ashore safely, as it would take all of that time to get a cordon of soldiers down to Vera Cruz to prevent his escape and to have the ship guarded so that no one could come on board or go ashore from the ship. Coney instructed him, that when he opened the door he was to follow him down into the steerage without looking back. Coney would pretend that Diaz had done him some wrong; and he was to follow, shrugging his shoulders. When once below he was to take hold of a bale of cotton and roll it out toward the porthole just like the other lighter-men, and to jump out with it into the lighter.

When Coney concluded his instructions, Diaz asked for a piece of paper, which was given him, and he began to write. Mr. Coney asked him what he was going to do. The reply was, "Although you see me in this shape, I can do as much for you as that Colonel who offered you fifty thousand dollars." The purser replied that he had taken no offense at the colonel's offer, because he made it in compliance with his duty; but that he, Diaz, had no right to insult him, as he never would risk his life for money. The tears came to Diaz's eyes, and he threw his arms about his liberator, saying that from that day he was his brother, and that while he had two shirts one would be his.

In the mean time the soldiers were being disembarked, and all the officials of Vera Cruz came on board; for the rumor had spread like wildfire, much to the dismay of Coney, that the General was on board. Every moment was making it more and more difficult for him to get the General off; and he repeated his offer to carry Diaz to Havana, which he refused. At last Coney managed to get the lighter, that belonged to his friend the lighter-man, where he wanted it; and, after repeating his instructions to the General, he said, "ready?" Diaz answered "yes," and Coney took his door and swung it back violently and stepped out, followed by the General, who was the embodiment of nerve. Coney at once began abusing him in Spanish as he would one of the lighter-men. They had to go a distance of about thirty feet forward, then around the pilot-house down the stairs to the steerage, where the lighter-man was waiting for them.

On reaching the foot of the stairs the lighter-man said, "Where is the box of arms?" Coney answered, "This is it," pointing to the General. The lighter-man rushed to the General, raised his hat and recognized him, and immediately wanted me to hide him in the machinery of the ship or in the coal-bunkers, saying that at night he would come after him. This Coney refused, reminding the General of his promise to carry out to the strictest letter what once they had decided upon, and telling him that he had three hours to go ashore with perfect safety. Diaz promised, and turned the corner. Coney left and went upstairs, got out his papers for the house, and immediately went to the hatch and looked down, where he could see General Diaz turning a bale of cotton with the men. He watched him until he saw that he got out of the porthole, and then went to the side of the ship and cast off the line. The tide

swung her out, and she got beyond their reach, to the indignation of the first mate.

The chief of police now came to Coney and made a formal demand to search the ship. He was referred to the captain, who gave his consent; and they searched the ship from top to bottom. To the great indignation of all Coney's shipmates he helped him search for Diaz, an act that was most trying for him, from the fact that all his shipmates thought he was trying to find out where the General was concealed in order to give him up for blood-money. They would not speak to him, avoiding him and in every way showing their contempt and disgust at his supposed position. They thought that he was trying to deliver over to death a man whose life had a price placed upon it; but afterward, when the truth was found out, they made more than ample amends. The clothes of the General, and his pocket book, except a gold chain which he wished Coney to deliver to his wife so as to verify what he would tell her, were given over to the chief of police.

The information that Coney had refused fifty thousand dollars came to the knowledge of the then President of Mexico, Mr. Lerdo, who said that no American would refuse fifty thousand dollars, for he would sell his own father for that money. Consequently it was a mistake: Diaz was never aboard the vessel. This helped General Diaz indirectly; for it relaxed their vigilance and kept them still in doubt as to whether he really did or did not come on that vessel.

The General got safely ashore; but before landing he was able to hear at the mole the instructions given by the commander-in-chief of the military forces in Vera Cruz, this enabling him to know how to avoid capture. Diaz made his way into the interior, to Oajaca, on foot, and there met his friends. He organized an army, and at the battle of Tecoac defeated the armies of Lerdo, and entered the capital of the republic, from whence Lerdo fled. From the battlefield of Tecoac he wrote Mr. Coney a letter, telling of his triumph, calling him his brother, and insisting upon his coming to Mexico on the return trip of the ship. Mr. Coney had a pressing invitation to go to Mexico, which he accepted. When he arrived he stopped at the United States Consulate, and on the following morning was awakened by President Diaz, who came dressed in full uniform with his full staff. As he awakened Coney he said, with a laugh, "You did not used to sleep so sound on the steamer."

Diaz gave the purser a reception worthy a king, and renewed his protestations of friendship and brotherhood, thus forming a friendship which has never been broken. Mr. Coney's act has resulted in what may be termed the making of Mexico, as under the wise administration of Diaz the country has stepped at once into the front rank of nations of progress, and commands the respect of the world.

THE RECENT DISTURBANCES IN CHINA.

By Frederic J. Masters, D. D.

CHINA is again passing through one of those periodical outbreaks of fanaticism, violence and unrest that have already given so many black chapters to her nineteenth century history. There are times of tranquillity when she is seen cultivating the arts of peace, encouraging Christian teachers and foreign traders, constructing railroads and telegraphs, starting new industries, opening her buried minerals, and extending her commerce; and we congratulate ourselves that her night is far spent, and the time of her redemption draweth nigh. Then comes a reaction, characterized by an insensate hostility and even brutal violence to those whom she yesterday honored as benefactors. It is all very discouraging; but we need not despair. To regenerate a nation of such hoary antiquity, a population of such surpassing density, and a people of such deeply engrained habits and superstitions, is a work so immense that it need not surprise us if many upheavals and perhaps a great disintegration should take place before her reconstruction is accomplished.

Nothing has happened since the Tientsin massacre of 1870 that has caused such widespread alarm as the anti-foreign riots now taking place along the Yangtsze Valley. The troubles began in April last, with the destruction of Roman Catholic property at Yangchow. This was followed a few days afterwards by a riot in Wuhu, a city on the Yangtsze River, about a hundred miles from Nanking. Here again the Roman Catholic Mission was first attacked, the buildings battered down, the premises looted and the inmates driven out. The fine cathedral, hospital and mission houses were all ransacked and burned. The *émeute* fortunately passed off without loss of life. In a few days the excitement spread to the important city of Nanking. High Government officials friendly to foreigners warned them of the coming storm, and succeeded in getting the European ladies and children out of the way. They had hardly reached the steamer lying in the roads when mobs simultaneously attacked, looted and fired the Roman Catholic Mission, the Methodist-Episcopal Hospital, the Presbyterian Mission and other foreign establishments. The timely arrival of the military prevented a wholesale destruction of property and perhaps loss of life. On the 7th of June a more serious disturbance took place at the city of Wusueh some three hundred miles farther up the Yangtsze, an attack being made upon the Protestant Missions while the missionary gentlemen were away in the country. Defenseless English ladies and children, accompanied by their faithful native servants, were driven into the street and assailed with sticks and stones. Beaten and wounded, they fled to the mandarin, who refused to succor them, but were finally sheltered by Christian Chinese. Two Englishmen who came to the rescue were brutally murdered, one being stoned to death, the other hacked to pieces by the swords of the mob. Two days afterwards an outbreak occurred at Kiu Kiang, about twenty-five miles farther up, where an attack was made upon the premises of the American Methodist Mission. The officials here acted with commendable promptitude; and when the American and German gunboats appeared the rioting had been suppressed, and the Chinese soldiers were found guarding the Mission property.

The whole Yangtsze Valley was now in a state of ferment; and every day brought tidings of disaffection and trouble in distant places. The local

mandarins could not be relied upon to protect foreigners. Gunboats of different nations were sent to the various ports; and foreign residents organized themselves into corps of defense. Vigorous pressure was also brought to bear upon the government of Pekin to obtain indemnities for loss and guarantees for the better protection of foreigners in the future.

Hopes were now entertained that the storm had passed over; but it was only the short lull of the center of a typhoon. On the 2d of September, without any warning, a serious riot took place in the city of Ichang, one of the newly opened treaty ports. The American Episcopal Mission, the Roman Catholic Convent, and the Scotch Mission house, were sacked and burned, and the customs and consulates attacked or threatened. After two days' rioting, in which all possible damage had been done, the military appeared in great force and mounted guard over the blackened ruins.

A series of riots had now been carried on along the Yangtsze River, with very little interference from the authorities, in which foreigners had been massacred and much valuable property had been destroyed. The Government at first did not take matters to heart. Had not America and Russia, in excusing their anti-Chinese and anti-Jewish riots, maintained that a nation had the right to exclude objectionable aliens? Such an argument could but embarrass our ministers at Pekin. But the authorities now felt matters had gone far enough. The foreign ministers were aroused, and there were threats of armed interference. Liberal indemnities were promptly paid to the sufferers, several officials were degraded, dismissed or banished, and numbers of rioters were arrested and beheaded. The higher officials issued proclamations threatening with instant death any one caught molesting a foreigner. Above all, the Emperor issued a decree, the most remarkable document that has ever emanated from Pekin, almost extolling Christianity, and describing missionaries and their converts as "good and peaceable people," who must not be molested. This edict has been published throughout the empire, and remains on record as an Imperial testimonial for all time of the excellency of the Christian religion, the merits of its teachers, and their right to carry on their benevolent work in China.

After another short lull serious disturbances have broken out in Mongolia, not far north of the great wall. Full particulars have not come to hand at the time of writing. It appears that the rebels are not Mongols, but Chinese colonists and brigands, forty thousand of whom are led by Li Hung, the son of an ex-rebel chief who was executed some years ago. The Belgian Missions have been attacked, several foreign missionaries killed or wounded, native priests cut in pieces, and hundreds of native Christians cruelly martyred. It may be remarked that some anti-missionary newspapers in this country, in commenting upon these shocking outrages, have apparently been convinced that, after all, there are some native Christians in China. It is satisfactory to note the telegraphic announcement that the Imperial troops have been victorious, and that the rising in the North has been put down.

The question now arises, What caused these disturbances?

At first the rising seemed to be directed against the missionaries and the Christian religion. The same old stories heard just before the Tientsin massacre, about Roman priests scooping out babies' optics and hearts as materials for the manufacture of foreign drugs, have been circulated on this occasion. The literati of Hunan have been employed for several years in the publication of the vilest and most blasphemous literature. Anything more abominably indecent, or more calculated to incite an inflammable people against Christians, could not be imagined than these lying tracts and obscene broadsheets. One paper recited

the foulest slanders about priests and nuns; another tells how Chinese girls are drugged and debauched by missionaries; another describes how little children's eyes and bowels are made into medicine and photographic chemicals. That these scurrilous publications were a powerful factor in inciting the people to mob violence cannot be denied. But the anti-Christian riot theory has been generally discredited since the Mason event and the attacks upon custom-houses, consulates and mercantile houses. It is more probable that missionaries were attacked because they were foreigners, and also because their establishments were the most prominent foreign buildings in the place.

A theory has been put forth by a Mr. Drummond of Shanghai, who as early as two years ago predicted the present rising. He says that the recent troubles have been stirred up by secret revolutionary societies that have long been swarming in the Yangtsze Valley; that these society men have made war upon foreigners, not from any special animosity to them, but with the idea of embroiling the Government of China with Western nations, and provoking a foreign war, which would afford them a favorable opportunity for an open revolt against the

His Imperial Majesty Kwong Sui, Emperor of China.

Government and the overthrow of the Tartar rule. This theory has been accepted by many prominent officials, both Chinese and foreign. But in the light of facts at present available this explanation is hardly reasonable. The leaders of the rebel societies must have sufficient intelligence to know that foreign powers have no quarrel with the Manchu government as such, so long as it is friendly to us and faithful to its treaty stipulations. But when it becomes evident that the ruffians who have attacked foreigners are also rebels, and rebels that the Government is too weak to suppress, it needs no prophet to foretell how ready the aggrieved powers would be to join hands with the Imperial forces against a common foe, and crush the villains who had thought to make the massacre of foreigners the stepping-stone to a revolution.

The most active and most influential secret society in China to-day is the

Her Imperial Majesty, Empress of China.

Ko lo Hui, or "Association of Elder Brothers." It is a branch of the Hung league, whose origin was described in the January number of this magazine, and is a sister of the White Lily, the Triad and other revolutionary societies in China; and of the Chee Kung Tong or Yee Hing Hui of the United States. Its object like theirs is the

re-establishment of a native dynasty. The Ko lo Society is largely composed of men from Hunan, by far the most turbulent province in the empire. They were formerly soldiers who were employed to put down the rebellion, and who subsequently followed Tso Tsung Tang on his victorious Central Asian campaign. Flushed with victory they returned home and formed themselves into a benevolent society, in many respects resembling our "Grand Army of the Republic." When the Government, owing to financial straits, saw fit to disband this force and stop the veterans' pensions, there was trouble. The Ko lo's soon degenerated into blackmailers and rebels, forming themselves into marauding bands that made a prey of wealthy landowners, merchants and gentry. All the loafers and vagabonds of the district rallied to a society that was strong enough to plunder rich villages and homesteads, or levy heavy tribute and subsidies. So influential has this organization become that its power extends through the provinces of Kiang Su, An Hui, Hunan, Hupeh and Kiang Si; and wherever its emissaries are found it has become a standing menace to public peace and the stability of the Government.

For a long time evidence has accumulated of a deep laid Ko lo plot to drive all foreigners, the Manchus included, out of China. The late Marquis Tsing, formerly ambassador to England, was a Hunan man; and during the time he was viceroy of Nanking he managed to keep the rebels in check. One can hardly credit the statement of Mr. Drummond, that, in consideration of a monthly subsidy of fifty thousand ounces of silver paid by the Marquis into the Ko lo treasury, it was agreed to have no trouble during his lifetime. That no anti-foreign troubles took place during the lifetime of that singularly pro-foreign statesman is more likely accounted for by the great personal influence of the Marquis, and the universal respect entertained for him in his own province, as well as throughout the empire. Since his death in November, 1890, the rebels have lost no time in coming to the front.

The plot that was unearthed last September, in which several foreigners figured so ingloriously, shows they are in earnest, and in command of funds as well as men. A large consignment of first-class arms and ammunition was seized on a coast steamer; and Mr. Mason, a customs official, was arrested with a twenty-five-pound packet of dynamite in his possession, supposed to be intended to blow up the Imperial palace. Be that as it may, the rebels are evidently intriguing as did the Taepings to get mercenary foreigners into their employ by tempting offers of pay; and but for this fortunate discovery, seizure and arrest, China might at this moment have been convulsed with civil war.

The rebel cause had another set-back in the capture of one of their leaders. Chen Kin Lung had been traced to an inn in Soochow. In the middle of the night a simultaneous dash was made upon him by the police; and before he could alarm his comrades he was seized, gagged and carried in chains on board a steamer for Shanghai. On his person were found a poniard with a poisoned blade and some compromising documents, in which he was addressed as the Eighth Prince. Three examinations were held; and, after unavailing efforts had been made to induce him to divulge the conspiracy, he was put to the torture. The chieftain bore all with unflinching fortitude. At last he broke silence with these brave words: "Your excellencies may spare yourselves the trouble and me the pain. I am not the only one ready to lay down life for this cause. My head, flesh and bones are yours. Take them and end this farce. Do not deceive yourselves with the hope that I will ever betray my confederates or deny a cause that will bring untold happiness to our country for a thousand generations." One cannot repress a feeling of admiration for this

brave fellow. He had only to tell what he knew, pilot the police to the headquarters of the conspiracy, assist in capturing the rebels, implore the Imperial pardon, and he might have risen to military renown as other renegades have done. But the intrepid warrior preferred death to dishonor. An iron hook was thrust into his collar-bone; and he was led forth to execution, where he bravely met his death.* No wonder that the Chinese Government shrinks from provoking a conflict with such desperate men.

To return to the causes of the disturbances. It seems plain that the attitude of the Ko lo Hui is anti-foreign. The Hunan people, of whom this society is so largely composed, are the most arrogant and exclusive

His Excellency Li Hung Chang, Viceroy of Petchili and Prime Minister of China.

* About twelve years ago, during the writer's residence in China, he was involuntarily the witness of a rebel execution. The sickening sight will never be forgotten. Ten poor wretches, heavily chained and half-stupefied with samshu, were carried in baskets to the execution ground. Each rebel had a label pinned to his neck describing his crimes. The culprits were dumped upon the ground and compelled to kneel in a row with heads bent towards the north, as if in submission to the Emperor. The district magistrate arrived, the sheriff held up the warrant flag, and the execution began. The executioner, a pale-faced, wiry-looking man, came forward with a sharp, heavy knife about four feet long. The blade fell with a dull thud upon each neck. At each fall of the knife a head went spinning off, and the headless trunk fell forward. Death was swift and sure. Ten heads had gone off in less than thirty seconds. There was a momentary twitching and quivering of muscles, and all was over. Next day the heads were stuck upon poles on the tower over the gate of the city, as a warning to others.

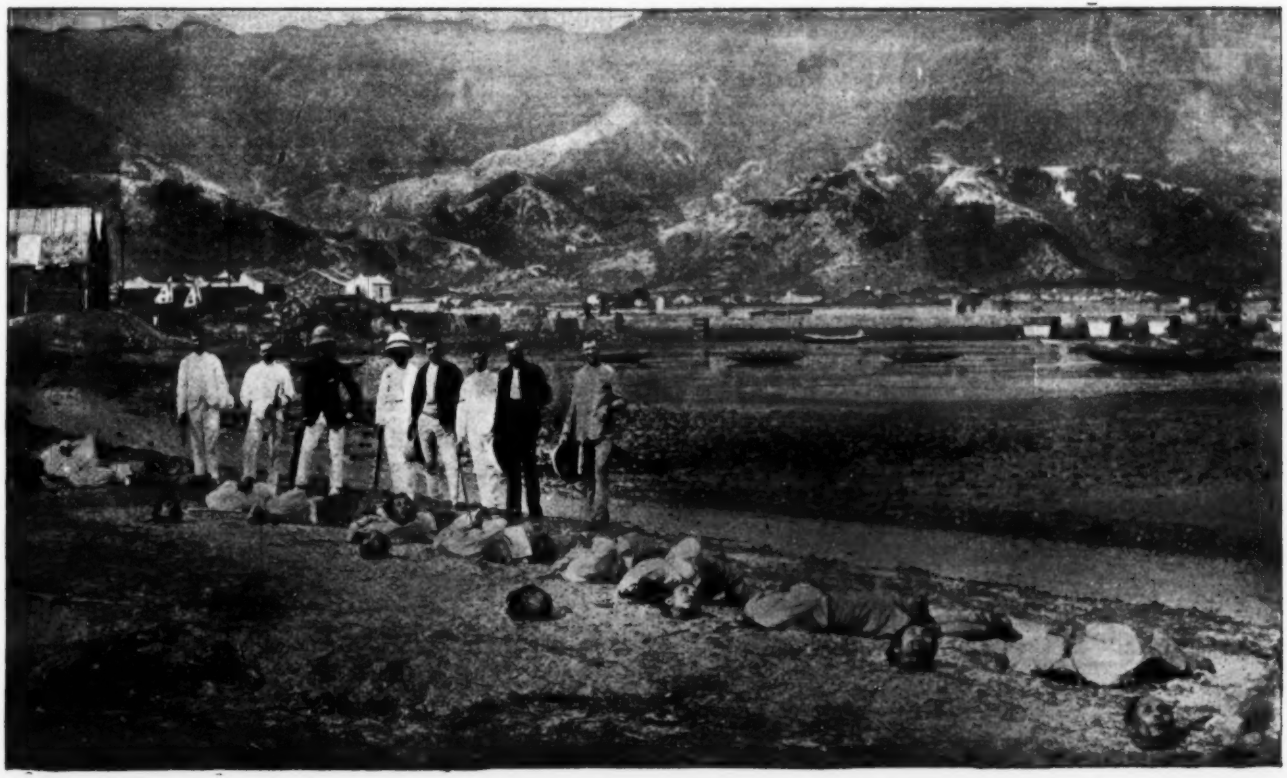
people in the empire. They claim to be of pure Chinese blood, the true sons of Han, and look with haughty disdain upon the Chinese of the South and the West as if they were "foreign devils." Emperor, missionary and merchant must go, because they are foreigners. They have long boasted that their province is the palladium of the empire, that no foreigner has ever found a footing in their midst, and that their people have never been and never shall be contaminated with foreign ideas and foreign innovations. The people are imbued with the most inveterate hate of the foreigner, his religion and all his works and ways, which is intensified by the publication of the scurrilous anti-foreign literature already referred to.

The ignorant classes have been taught to believe that the foreign-devil kings are plotting to conquer China and parcel it out amongst themselves, and that when the foreign merchants have impoverished the country with opium, and the missionaries have deluded the people with false doctrines, the conquest of China will be accomplished. The propagation of such slanders about foreigners is very exasperating; but it must be confessed the Chinese have had much to provoke their hostility; at any rate they have had little reason to be grateful to us.

The whole history of foreign intercourse with China has been hatefully cruel and unjust. Foreigners forced themselves upon China at a time when she desired nothing better than to be let alone. Her ports were bombarded to open markets for our commerce. The most attractive sites in her open ports were taken as residences for our merchants. Bloody wars were waged with China to force her to legalize a trade in opium which the Emperor To Kwong saw would bring moral and financial ruin to her people. There is no doubt that whatever treaty rights we enjoy in China to-day have been obtained at the point of the bayonet. We have forced ourselves into the coast ports, into the interior, and even into the very capital. We have talked and blustered as if the country belonged to us. We have stalked through the land, trampling upon Chinese prejudices, shocking their conventionalities, and outraging their cherished traditions. For nearly a century we have bullied and plundered China. We have set up our autocratic settlements and our extra-territorial rights; and when China has dared to murmur we have shaken our fists in her face and called for the inevitable gunboat.

Time passed, and her people began to come out of their shell. They dared to claim the right to emigrate to Western lands, just as Western people have gone to China; but they made money out of us, just as our merchants make money out of the Chinese: and we have told them to go. We treated her merchants as the scum of the earth, and insulted her ambassadors at our very gates. We have enacted exclusion acts and anti-Chinese ordinances that place these people under cruel disabilities, and which would call out every ship in our navy if the Chinese did such things to us. We have looked calmly on while mobs have invaded their settlements, broken into their homes, plundered their property, and massacred people as defenseless as babes, whom we had bound ourselves by treaty to protect. Yet after all this we are disappointed that China has no strong affection for us. Forgetting the scores of murdered Chinese whose bones lay bleaching on Wyoming hills, we burn with vengeance over the massacre of two white men in China. The only wonder is that the Chinese have not long ago risen up and swept every foreigner out of their country. We Anglo-Saxons are indeed a nice lot of people!

This anti-foreign sentiment will explain, too, the Ko lo rising against the Government. The offense of the Manchu Government is not that they have ruled worse than a Chinese dynasty would have done, but because they are foreigners. Although the Manchus came to the throne 250 years ago, the



Execution of Rebels.

Emperor is a foreigner in language, habits and customs. The garrison of the cities is also Manchu, and has its Tartar town, almost as foreign to the Chinese as the English government and European settlements in India are to the Hindoos, and just as little disposed to assimilate with the people whom they have conquered. That all this is an eyesore and a humiliation to the national pride of many Chinamen cannot be denied.

It is true that under the rule of several Manchu emperors the country enjoyed signal prosperity; and the people on the whole were happy and contented. But the present sovereign's reign has been seventeen years of misfortune,—sufficient to shake the people's faith in the claims of Kwang Sui to the title of "Son of Heaven." The terrible famine fifteen years ago, the enormous loss of life and widespread distress from the Yellow River inundations, the frequent ravages of pestilence, the agricultural distress, the badness of the tea trade, the corruption of officials, and other troubles, have combined to make the people of Central China discontented, and encouraged that superstition, so thoroughly Chinese, that the reigning monarch is not a favorite of Heaven, and that a new dynasty might bring happier and more prosperous times. On the whole there seems good reason to conclude that the cause of the present disturbances is the demand, so fashionable nowadays, for home rule, with the stirring battle cry, "The 'foreign devils' must go: China for the Chinese!"

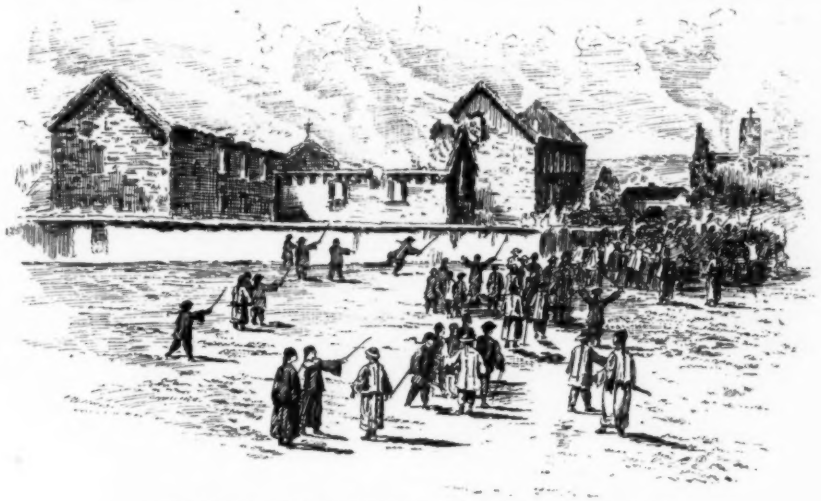
It is hardly within the range of probability that the Ko lo rebels will ever succeed. The recent crushing defeat sustained by the marauders outside the Great Wall a month or two ago is a lesson that the Hunan rebels will not fail to take to heart. They must know that the Imperial Government is in a better position to cope with an insurrection to-day than thirty years ago, when the Taeping rabble swept the country with fire and sword. The old-time army of ragmen armed with bows and arrows, or rusty spears and blunderbusses, has given place to a smart, well-disciplined modern-equipped force, trained by German and English drill instructors. The army of Petchili, the Black Flags, and the Pekin field force, are a well-armed, efficient and thoroughly contented body of troops undoubtedly loyal to the reigning house. The old war junks with batteries of "stink pots" have given place to modern ordnance of Krupp or Armstrong's best make, and a fine fleet of ironclads, cruisers and torpedo boats that rank high among the navies of the world.

It is safe to predict that this modern army and navy will be able to give a good account of itself should the present incipient rising shape itself into a definite and organized revolt. A rebellion of undisciplined rustics or even of the disbanded braves of Hunan would have little chance of success except in the event of the Imperial forces being diverted to repel a foreign invasion; and this is not likely to occur as long as wise counsels prevail among the diplomats at Pekin. However provoking be these outrages upon foreigners, the powers will rather exercise a little patience than plunge China into a state of anarchy that would overwhelm every foreign settlement in the country.

As to our attitude toward a rebellion characterized by such violence against foreigners, there can be but one opinion. The Taepings, professedly friendly to Christians, rallied to themselves a great deal of sympathy which the Ko los will never get. However slow, conservative, and perhaps corrupt, the Government may be, the interest and duty of foreigners lie in supporting the present administration. It at least symbolizes order, and is certainly better than anything the rebels could place in its stead. Any one who remembers the awful bloodshed, widespread misery and appalling desolation that followed in the track of the Taepings will never wish success to any

more revolutions in China, at least as long as her people are heathen.

We think it our duty to sympathize with home rule, and the overthrow of monarchies; and we take for granted that our system of popular government is adapted to every people under the sun. But is any one silly enough to suppose that the Chinese people are prepared for popular government, that China would be better ruled by a Ko lo government, or that the lawless hordes of Hunan could set up a more intelligent sovereign than Kwong Sui? The fact is that no rebel party has ever risen in China that has shown the least capacity for administration, or promised any reform of the abuses of the present system.

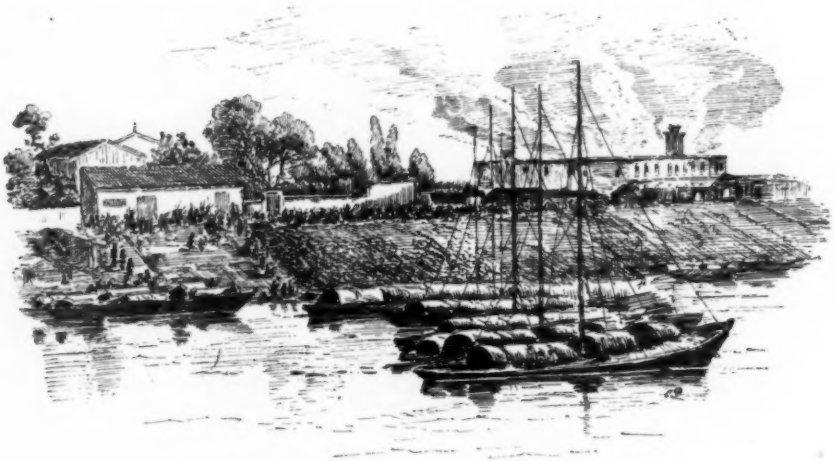


Wrecking the Episcopal Mission at Ichang, Upper Yangtsze.

There are men in China to-day of brilliant genius, high character and commanding influence, either of whom would adorn a throne; but they are inflexible in their loyalty to the Manchu emperor. The most powerful man in China is Li Hung Chang, Grand Secretary and Viceroy of Petchili,—the man whom General Grant called the Bismark of China; the man who has given China a modern army and navy, shipyards and arsenals; and the man who believes that fifty years hence China will be strong enough to withstand Europe. Next to him comes Chang Chee Tung, Viceroy of Houkwang, a statesman who hates foreigners but likes their methods. Both these men are favorable to reform; both are jealous of the other's power. The dynasty is in no danger from them. There is no statesman in China to-day whose loyalty is doubted, or who would be so crazy as to put forth aspirations to the throne in the face of tribal animosities and provincial jealousies that would rend the empire to pieces.

All things considered, the present Emperor and system of government are as good as anything China is prepared for at present. His Majesty is a young man twenty-one years of age. Brought up in seclusion, very little is known of him personally. His father, the enlightened Prince Chun, watched over his education and took pains to set before his son the necessity of cultivating friendly relations with the countries of the West. Foreign ministers who were present at the audience

in March last when the Emperor, departing from all the traditions of the dragon throne, received the Western ambassadors on equal terms, speak of him in the highest praise. He is described as having a face of marked refinement and intelligence. He was dressed in a plain official hat and a silken robe embroidered with a gold dragon, this simplicity of attire being in striking contrast with the gorgeous uniforms of his courtiers. The little that we know of the Emperor is decidedly favorable to his character and reign. He has shown a deep solicitude over his people's troubles, and an intelligent interest in whatever can promote their welfare. He has been more faithful to treaty stipulations than our Government has been; he has promptly issued decrees in favor of foreigners; and he is now reported to be diligently studying the English language, and to be in sympathy with the party of progress.



Chinese Burning the Roman Catholic Mission at Ichang.

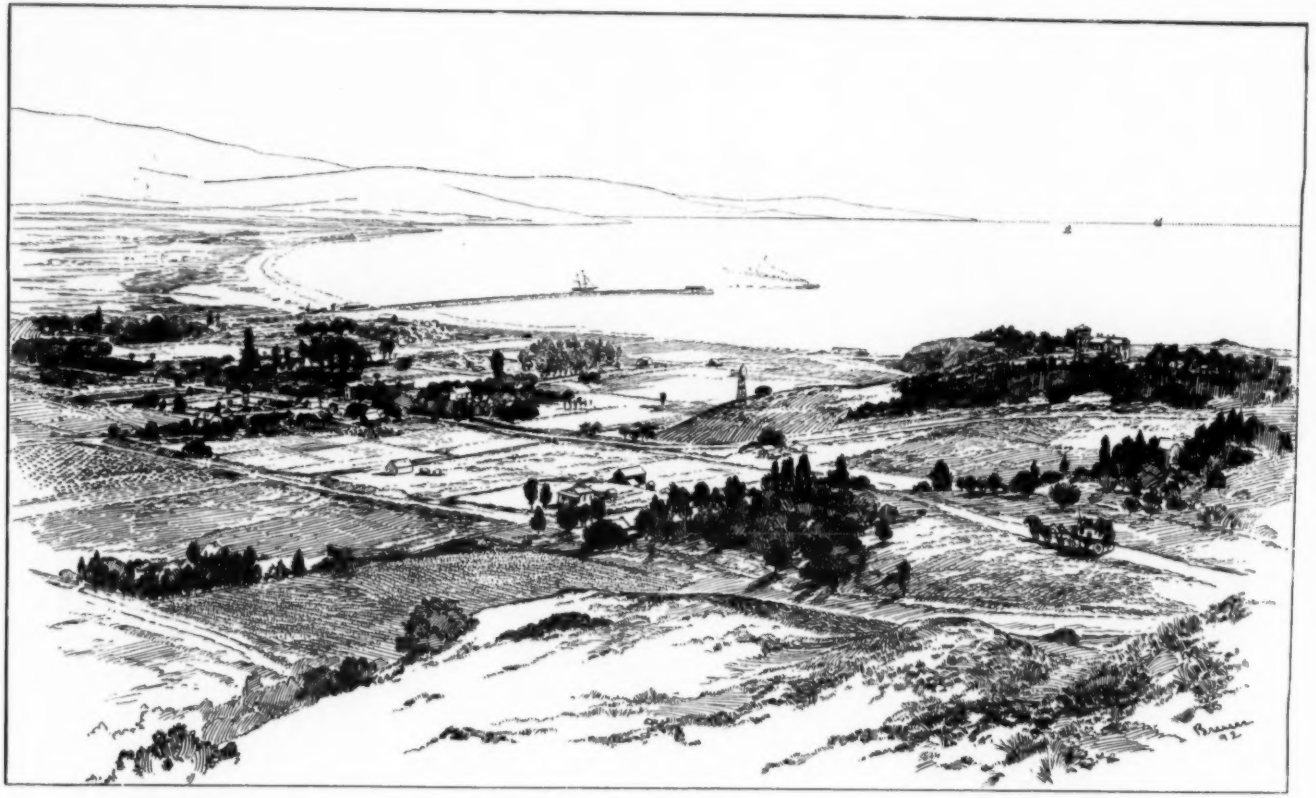
The Manchu government is not so bad after all. Judging by Oriental standards, its emperors have reigned with ability, rectitude and humanity. If they remain Tartars in tastes and habits they have never attempted to denationalize the Chinese or interfere with their religions, laws and customs. They have adapted themselves to Chinese traditions of royalty, have fashioned their court after the model of the ancient kings, and accepted the great principles of government laid down by Confucius and Mencius. The people have not been intentionally oppressed by excessive taxation or unjust laws. They can voice their grievances through legally appointed censors, whose duty is to criticise any errors of administration, and even rebuke the throne when necessary.

The Government has also shown its fairness in allowing the Chinese, who are the preponderating element in the civil service, a large share in the work of administration. These officials are no vulgar politicians,—the creatures of a political boss. They are educated gentlemen who have been chosen for their ability and advanced to office by a system of competitive examination that is a pattern to the civilized world. A government that can boast of such a system is not so irremediably bad as some foreigners would have us believe. That Chinese officials are corrupt cannot be denied. But are our boasted

higher types of government characterized by any superior purity? Throwing stones at corrupt Chinese officials may do some havoc to our own glass house. Everybody admits China has room for reform. It would be a good thing, *inter alia*, if her mandarins repented of their extortions, and gave up the cruel habit of torturing prisoners.

The Chinese Government will learn before long that it will be to their interest and credit to devote the enormous sums so frequently paid as indemnities to foreigners to the improvement of their police force, paying better salaries to officials; to relieve congested districts by colonizing sparsely populated territories; to open up her mineral wealth; and to construct railways and other public works.

To expect a nation of four hundred million conservatives, with institutions that have been crystallizing for ages, to be carried swiftly along the path of progress, is asking what is unreasonable. There must be no violent wrench from the past. Slowly, cautiously, discreetly, will China's regeneration be worked out. The present Government is sufficiently enlightened to see its people's needs, and can be trusted to heal the nation's sores, remove the causes of popular discontent, and adopt that policy of reform that shall ere long usher in the brighter age of individual liberty, national safety, and the increased comfort and prosperity of its people.



Santa Barbara Bay from the Coach Top.

A FOUR-IN-HAND IN SOUTHERN CALIFORNIA.

By Charles Frederick Holder

LOS ANGELES, the Queen City of the South, is the metropolis of Southern California, which, speaking generally, may be said to include that tract of country from Santa Barbara County to the Mexican line, though a broader division would include a much larger area. Los Angeles was the starting point, the center of radiation for many of our coaching and riding trips to Santa Barbara and beyond, and through Southern California to the adobes of Tia Juana. To see Southern California effectively the trip should be made by coach, carriage or on horseback. The finest of roads extend all over the country, inviting one to the old ranches, cañons, ruins and Missions that cannot be seen from car windows.

It was a mere conceit, perhaps, but remembering that in the olden time pilgrims and travelers in this fair country found a Mission at the end of nearly every day's journey from San Francisco to San Diego and beyond, we determined to emulate the ancient custom and go over the old roads; not on horseback, as did the old Californian, but in a four-in-hand, making as nearly as possible a Mission every night, seeking the hospitality of its secularized walls in reverential fashion, as did the traveler of the last century, yet receiving it for obvious reasons perchance at the neighboring ruin.

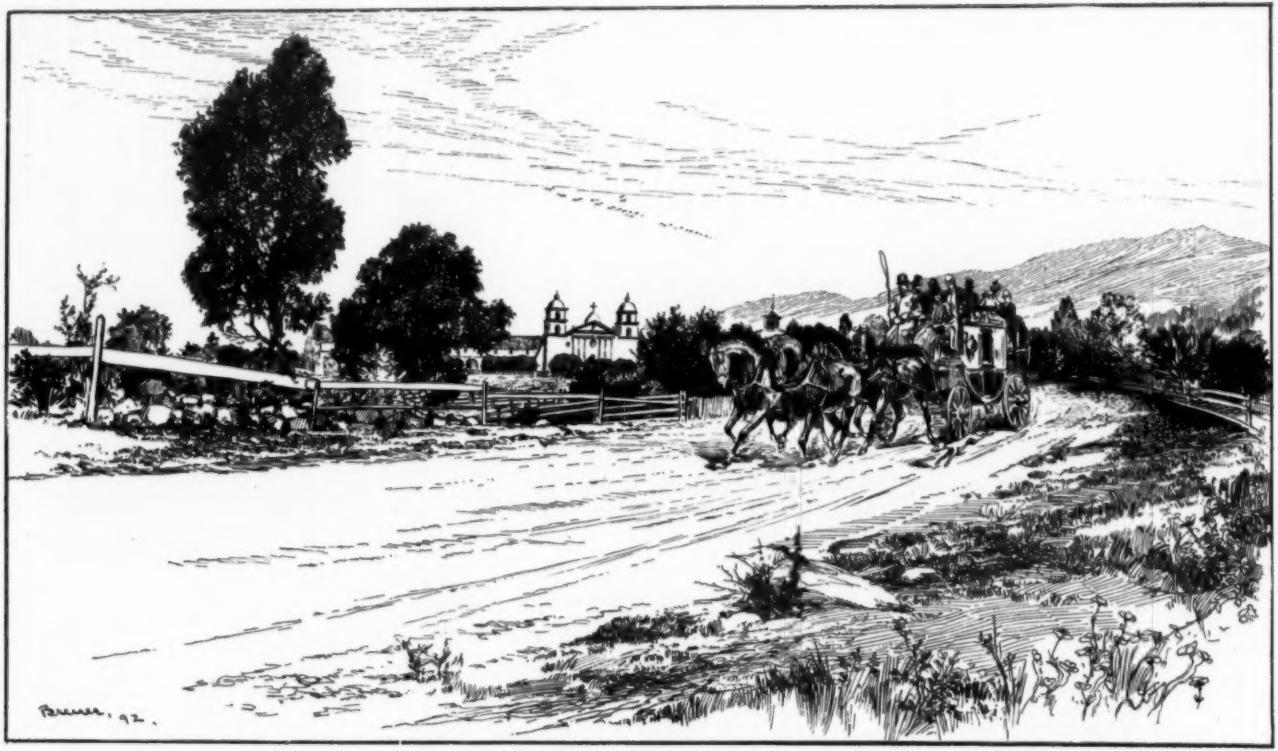
The plan had not only an essence of romance and novelty to commend it but was within the possibilities, the ecclesiastial chain being as follows, beginning at Santa Barbara:

Santa Barbara Mission, founded in 1786, by coach to the Mission of San Buenaventura (1782), thirty miles. From Ventura to Mission of San Fernando Ryz de Espana (1797), sixty-four miles. From San Fernando to the Mission of San Gabriel Archangel (1771), via Los Angeles, thirty-five miles. From San Gabriel to San Juan Capistrano (1776), thirty miles. From San Juan to the trio of Missions of Pala, Rincon, and Panba, about sixty miles. Pala to San Luis Rey de Francia (1798) thirty miles. San Luis Rey to the Mission of San Diego de Acala (1769), fifty miles, these figures being approximate and in the main correct. Not only could these Missions be reached in a single day's journey, but good hotels, often the best, were available. This, with the guarantee of perfect roads, good weather, and choice scenery made the trip one of more than pleasant anticipation.

The four-in-hand was not running on time; there were no relays to be met; hence the attempt to make a new Mission every night was not directly adhered to, though the ecclesiastical route was followed literally as outlined, with many an interesting side-trip to cañon, seashore and mountain range.

Under such inspiration a jolly party bowled toward the Santa Barbara Mission one morning, and reined up under its ancient walls. The "outfit" was a modernized California coach, the plethoric boot packed with hampers of good things; rifles for the black-tailed deer and shotguns for the valley quail, while four or five grey and stag hounds following were suggestive of coursing, with the hare and coyote as objectives.

According to a calendar, which the young lady on the box seat carried,



Down by the Mission of Santa Barbara.

it was that thoroughly uncomfortable period midway the Christmas holidays and the first of March, when, in the East, thaws and violent freezes follow each other like avenging Nemeses; yet here nature seemed conspiring to impugn the testimony of the records. It was winter as the seasons go, but to all intents and purposes midsummer in Southern California. The breeze was coming in from the Pacific, sweeping up the mesa of the old town, bowling over acres of golden poppies, robbing the fields of wild forget-me-not of their odor and carrying it over the Mission wall, to mingle with the incense of the church. The driver called it a winter day; yet as he flecked his leaders and the horn gave an answering note to the meadow lark on the Mission wall, there was not one in the party who really believed that the Ides of March were near at hand.

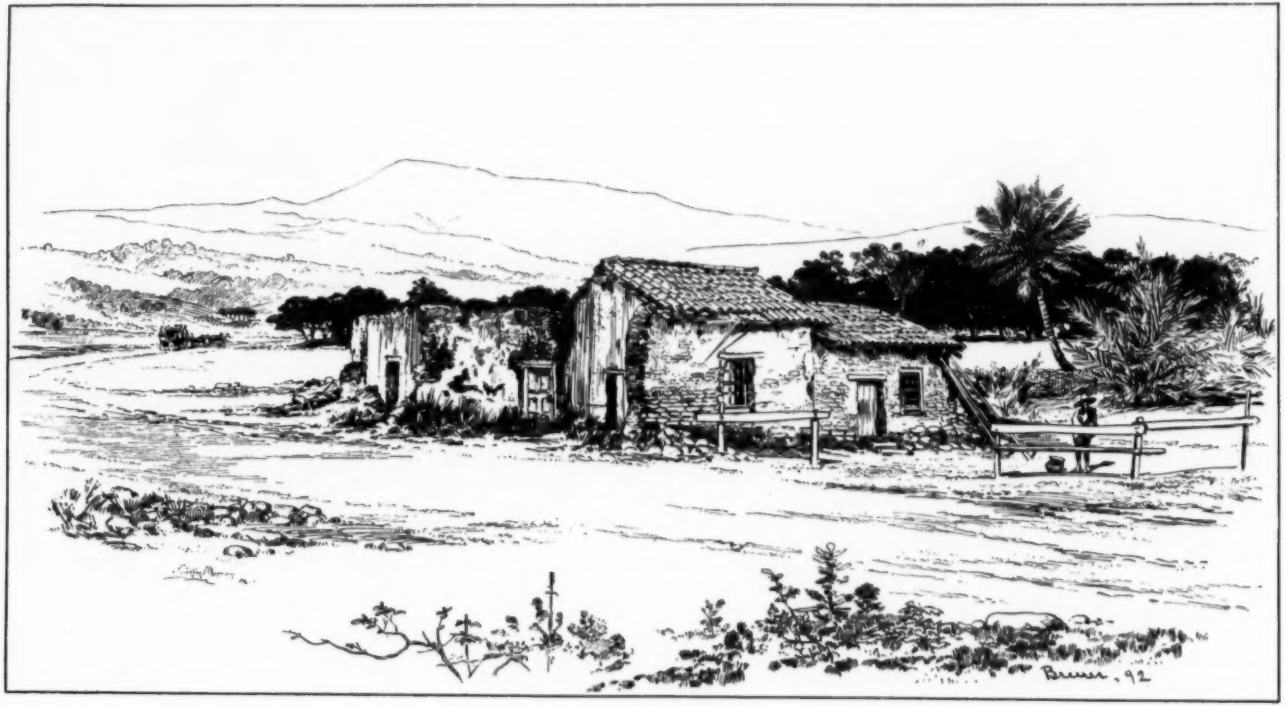
From the highlands about the Mission the first view of Santa Barbara is obtained. The Pacific is before us, stretching away to illimitable distance, the crescent-shaped beach facing the south, from which reaches back the intervening town with its broad streets lined with palm, pepper, magnolia and a wealth of semi-tropical plants and trees. To the north extends the Santa Ynez Valley, the blue ocean on one side, the mountains to the other, while to the south and east deep groves of orange, lemon and lime tell of El Montecito and Carpinteria.

It was at the Mission that the complete supremacy of man was demonstrated, as, after interviewing the courteous Fathers, the gentlemen of the party were invited into the Mission garden, while the ladies rested in the outer hall, consumed with curiosity. No woman had ever entered the garden, so it was said; and the old gardener, gowned and cowled, laughingly told of the pretexts adopted by fair visitors, who evidently believed that the grim walls concealed some deep mystery.

The Mission of Santa Barbara is the only one that has never been out of Franciscan control, and is one of the finest in the State, standing as it did a century ago when its bells rang the Angelus, their echoes calling the faithful up the deep cañons of the Santa Ynez.

The father told us of the ancient splendors of the church, of its inception by Junipero Serra, its erection in 1786 by Father Antonio Paterna, and detailed its completion in 1794. In 1810–12, he said, it was nearly destroyed by earthquakes, but was ultimately rebuilt. We entered the old dormitories, the workshops once filled with native artisans; stood on the red-tiled roof, and looked down upon the broad arched corridors where the Fathers walk and read; strolled among the ancient graves of the founders, and tarried in the chapel with its quaint decorations while the Father whispered the history of the treasures upon the walls. He told us of the struggles of the Fathers, the act of the Mexican Governor in 1827 in freeing the Indians, resulting in the destruction of the revenues of the Mission; of the desecration that accompanied the demand for secularization, and various efforts at confiscation. In 1833 the Government succeeded, and the Missions were converted into secular curacies. Later the Missions fell into the hands of commissioners, and in 1834 the public literally seized the Mission lands. We listened to the story of the successive phases of the struggle, of the times under Don Juan Alvarado, who, it was claimed, plundered the Missions, of the attempt in 1840 to restore the Missions to power, and of the act of Pope Gregory XVI, in the the same year, making California a bishopric, and many other moves, resulting to-day in the Missions being, instead of centers of ecclesiastical power, simple parish churches.

The Mission as a whole is a delight to the artistic eye. The cell-like rooms, the ancient and worn stone pavements, the crude doors with huge iron trappings, the high windows, enormous walls, the odor of ancient sanctity, all



Down by Spanish Town.

tend to complete a historical picture of the greatest interest. Without, the commanding front with its two towers of stone and adobe pierced with arched doors, the lofty façade with its finely cut columns, the time-worn statues of the saints above, make the pile at once striking and impressive. No little architectural and artistic skill was shown by the builders. Especially does the stone fountain in front, with its round basin and quaint carvings, attract the eye. Near here was an adobe bath-house, in the façade of which a lion's head was carved, from which once poured the clear water of the Santa Ynez. In fact, it is evident that the builders of the Mission were men of artistic feeling; and the old building reflects credit upon their memory.

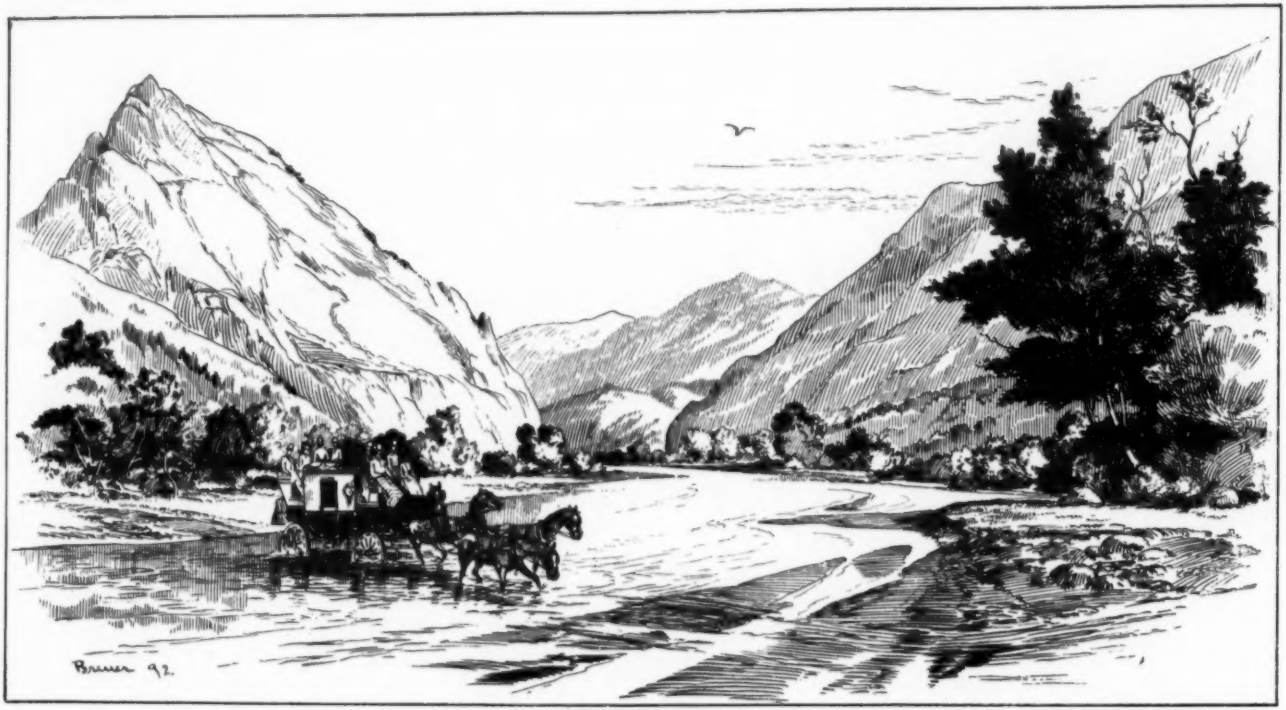
But we have tarried too long. A number of dark-eyed penitents are waiting for the Father by the confessional, and after handing an ancient nail or spike of the old Mission as a memento to one lady, a photograph of the church and some flowers from the garden to others, the Father disappears to banish the past in the sins of the present generation.

Santa Barbara reminds one of some of the Mediterranean resorts, and has been compared to Nice; but the comparison is hardly just. The American resort has the advantage in climate, is always delightful, winter or summer, but has none of the artificial decorations of European places. Its winter mean is 54.29; that of Nice 47.88; its summer mean 67.71; that of Nice 72; its difference between winter and summer 13 to 24 of Nice. Again, the Santa Barbaran, or Barbarian of the saints, as the young lady on the box-seat calls our host, tells us that the hot, burning winds of Southern Europe are never known here,—that this is the only paradise, the real land of *dolce far niente*, the home of the gods.

The quiet old town with its fine hotels, long asphalt-paved streets, its miles of gardens, shops for the sale of curiosities, its Chinatown, where the odor of opium and firecrackers mingles with the perfume of flowers, its long wharf, yachts and vessels, all offer inducements to tarry. Spanish-town still remains inviolate, and we stop at the old De la Guerra mansion, where Richard H. Dana witnessed the marriage festival in 1836. The family is still in possession, and the house, with its open court, adobe walls and tiled roof, still resembles the description in "Two Years Before the Mast." We buy a *reboso*, an Indian basket, from an old Mexican woman, some of the stamped-leather articles for which the place is famous, half a dozen fiery tamales from another old woman, for luck, the driver puts it, and are away up the fine, hard road to La Patera, where the Indians buried their stone mortars and household gods in the long ago.

Near here we drive through the fine ranches of Hollister, Cooper and Stowe, the former known as "Glen Annie." "Ellwood," the Cooper homestead, is famous for its olive orchard,—the largest in Southern California, also in America, with works the perfection of neatness, over which the courteous host takes us. The home is embowered with flowers from every clime,—a garden the year round. From here we pass for several miles up the picturesque little cañon by the side of a stream and beneath trees that were young in the days of the Franciscan padres, and finally at the head of the ravine halt for a consideration of the well-filled hampers which the coach is made to disgorge; for this is a feature of coaching in Southern California,—the mid-day meal is carried, and a picnic is enjoyed in some nook or corner that may meet the eye.

From this region endless trips can be made to glens and eyries which, in their beauty, compare favorably with those of European resorts: the Gaviota Pass, the Valley of the Santa Ynez, the mountains rising to the east, while to the west the ocean is seen, here and there,—a reminder of the extremes that Santa Barbara



Fording the Stream.

affords. Here the lover of the picturesque may spend weeks without exhausting its beauty. But we are off again, rolling down to the beach with its long line of shining sands, calling to mind our own New England shore. But here, the Santa Barbaran tells us, the water on this February day has a temperature of 61 degrees, about that of Newport in June. Tourists are enjoying the surf; the beach is gay with riders, while the castellated rocks on the north are dotted with strollers from the hotels. Over beyond the blue stretch of water that formed the Santa Barbara Channel rose the Channel Islands, the smallest — San Nicolas—having a peculiar interest. In 1836, we are told, the last Indians were taken away; but as they were leaving a squaw ran back to get her child, and for some reason was left and abandoned. In 1856, twenty years later, George Nidever of Santa Barbara landed there on an otter hunt. To his surprise he found huts of whalebone, and near one an old woman, dressed in a garb of skins and feathers. She presented a weird appearance; her language was unintelligible. Nidever took her to Santa Barbara, where every attempt was made to find some one who could talk to her, but without success. What became of her child no one knew. The "lost woman" died three months after her rescue, and was buried by the Mission Fathers, — unknown,—a mystery of a lost people.

We could have reached the famous Ojai Valley, thirty-seven miles southeast from Santa Barbara, through the Casitas Pass, but preferred to go by the Mission of San Buenaventura, thirty miles away. This took us through the delightful suburbs of El Montecito, with its hot sulphur springs far up the cañon, thirteen hundred feet above the sea, where the Indians resorted years ago, by nooks and corners of the Santa Ynez, the San Marcos Pass and the Painted Cave and Rocks.

The stage road winds along the edge of the shore, now desecrated by the rails of the Southern Pacific, gleaming sandy crescents succeeding one another in endless variety. Through the orange groves of Montecito we enter Carpinteria and its slopes. Here a peculiar patch of black ground being plowed by a Mexican catches the eye of a scientific coacher, who pronounces it the site of an ancient Indian village. The Mexican stops work as the coach slows up, leans upon his plow, and while rolling a cigarette sententiously answers the questions thrown at him singly and in pairs. After much solicitation he finally enters the adobe near at hand and returns with some of the results of his plowing,—ancient relics turned up in former barley seasons: a stone mortar, some abalone shells, the holes stopped with asphaltum, the dishes of the Indians, bits of soapstone with perforations, arrowheads of flint, and, horror of horrors! a flute that some ancient disciple of the muse has manufactured from the arm-bone of possibly a kinsman. It is rudely made, and ornamented with bits of pearl from the abalone. Beads of shell and a flint knife complete the treasures of this collection.

"Who were these people?" asks some one on the top of the coach.

"No sabe, señor," puffs the Mexican.

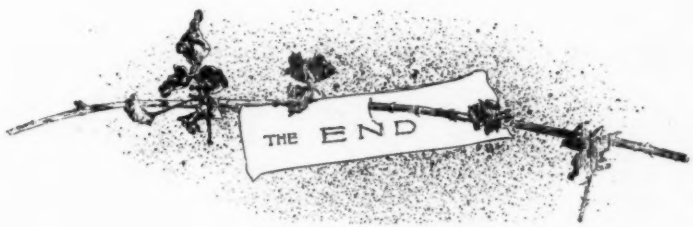
He might have said that his house was resting on a veritable *kitchen-midden*, a townsite, graveyard, and what not of the early Californians Juan Rodriguez Cabrillo met when he sailed up the Santa Barbara Channel nearly three hundred and fifty years ago. He could have said that the adventurer found this land the site of many villages, where lived thousands of happy natives. He might have told us that his ancestors were of the party, and that they buried the great captain, Cabrillo, on San Miguel over yonder, where he still sleeps. But he said nothing, and looked in stolid amazement at the volubility and learning of the American whip of the strange vehicle.

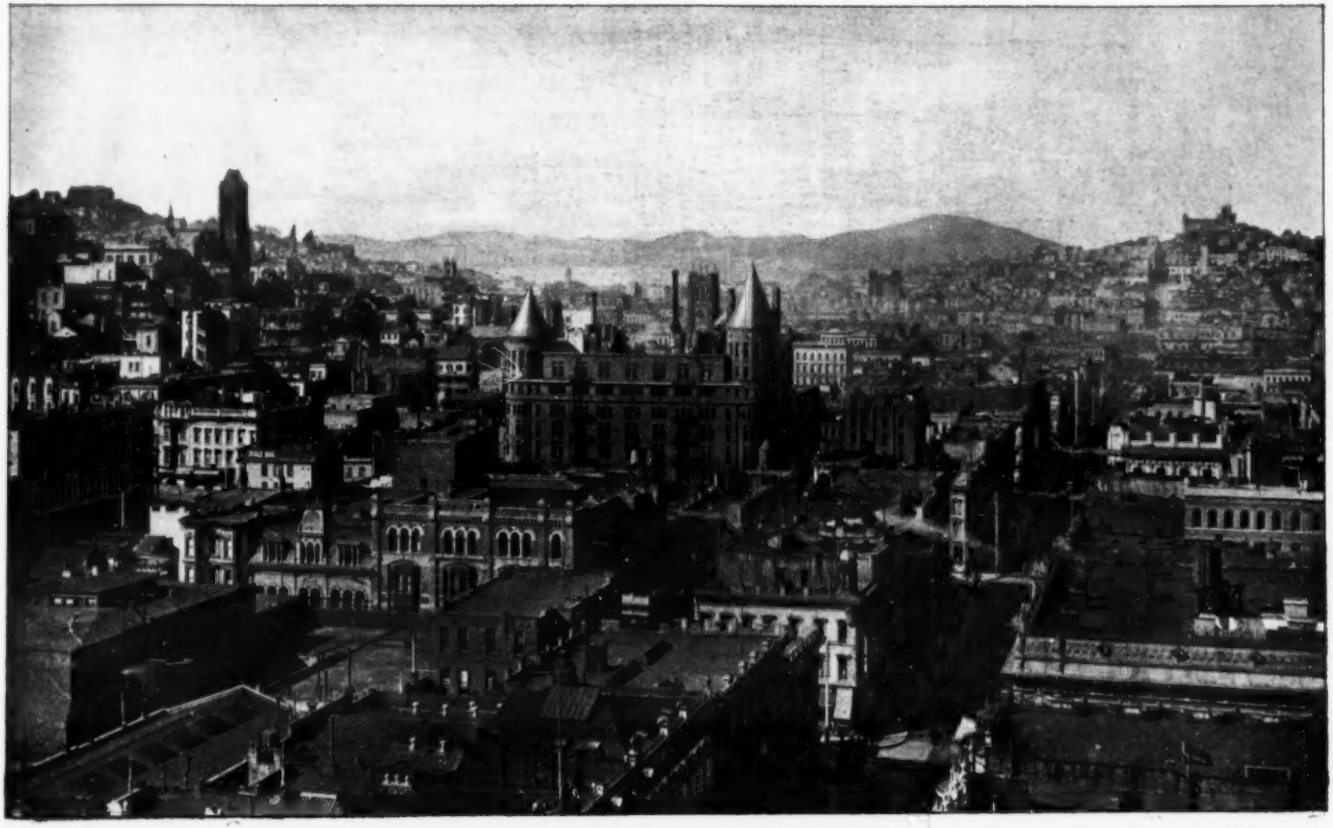
Stopped by Castle Rock.

Our road follows the beach through Carpinteria, past sand-dunes where rich grasses grow, where the faint track of sea-birds is seen and the roar of the surf breaks gently on the ear. Beyond is the ocean, smooth as glass, with beds of kelp floating lightly,—the resting place of the gull and otter; over beyond the sail of a Chinese junk, the smoke of an American steamer. On we pass, the ocean to the right, the green slopes of the Santa Ynez on the other side, through little cañons that reach down to the shore, playing a veritable game of hide-and-seek with the gleaming ocean. Now the adobe of some Mexican ranges into view, with its barren, well-worn dooryard; its ramada and garlands of chilies, red and glaring, its hairless dogs, and dark-eyed children who have never seen a red and yellow coach and stare hard and long, silent at the melody of the horn.

Down we plunge into the little arroyo, splashing across the clear brook that, with its sparkling sands and dashing trout, comes gurgling down under the arches of elder and willow; up the bank with a rush, winding through a grove of live-oaks where the tap tap of the woodpecker echoes and the gray squirrel flashes his fox-like tail; out into the fields again, the road lined with yellow violets, with crazy-quilts of color,—bluebells, cream cups, daisies, poppies, bluettes and other wild-flowers galore, reaching far up to the manzanita and wild myrtle of the upper slopes. From the hillside comes the melody of the valley quail, then the roar of its wings. The nest of the wood-rat hangs on a limb. The air is filled with insect life dancing lightly in the sunbeams.

And so on we go, over the same road that Father Junipero Serra and Governor Felipe de Neve with their guard of sixty soldiers passed when marching to found the Presidio of Santa Barbara one hundred and nine years ago, and with a final burst we ride bravely into the old town of Ventura, cross the shallow river that creeps lazily out from the grove of alders and willows, round the big hill that divides the town, and passing the shadows of the old Mission of San Buenaventura seek the more material comforts of the inn of the roses.





Bird's-eye View of San Francisco Showing "The California."

ART IN HOTELS.

"THE CALIFORNIA."

By George Alfred Sherwood.

WHAT New York is to the East, San Francisco is to the Western country,—a city of cosmopolitan make up, remarkable prosperity and a center of energy and enterprise. Probably more tourisits visit the city than any other spot on this continent. It is the magnet which draws people to the Coast. Being so far from the centers of refinement in the East, where all that money and taste can provide is seen on every hand, it might naturally be supposed that San Francisco was lacking in many of the modern elegancies; but such is not the case. A glance over San Francisco to-day by the visitor who has not been here for two or three years shows a growth phenomenal in the extreme; a view of the city from the house-tops shows a magnificent city reaching out in every direction. The homes and electric roads have climbed the hills and are reaching out to the sea, so that in the near future all the area between the Pacific and San Francisco Bay will be covered. A glance around shows here and there new buildings rising above the city, such as the Mills building, the *Chronicle* building, and to the

Main Office, Looking East.
Finished in Antique Oak.

north the building of "The California" hotel, considered the finest piece of work on this continent.

This building illustrates as well as anything the advance made by the city in the last few years. No city in the world has a more perfect or artistic hotel; and its citizens may well take pride in pointing it out to strangers.

San Francisco is essentially a city of hotels, being, as I have said, the center of the tourist travel; and it would only be natural that an attempt would be made to excel all other efforts in this direction. There are larger hotels, many covering a greater area; but none are more complete in all that goes to make an artistic whole than "The California" of San Francisco, which embraces every convenience suggested by modern hotel science.

The New Yorker or Chicagoan will feel especially at home in "The California," as its genial manager is none other than Mr. A. F. Kinzler, who has a more than national reputation as the former manager of the Hotel Brunswick of New York and the Auditorium of Chicago. "The California" is in the practical center of the city,—within five minutes' ride of the princely residences of Nob Hill, and the best resident portion, yet equally accessible to the various depots and ferries. On entering, whether it be the main entrance, the theater, or the various private entrances, one is immediately struck with the feeling that here is a hotel with everything pertaining to it, yet so arranged as to convey the impression of an elaborate and magnificent private residence; and this feeling holds in whatever portion

Ladies' Parlor.

Bird's-eye Maple and Mirror Panels.

of the hotel the visitor finds himself. From without the edifice is a monument to hotel science,—a magnificent structure rising eight and a half stories, with two towers, which give it a finished and attractive appearance, while the neutral tints of the stone and pressed brick give a most pleasing and artistic effect. I have strolled through most of the hotels of Europe, but none impressed me as this. There is an air of completeness and artistic harmony peculiarly attractive, which must be seen to be appreciated. All the apartments have been made a special study by a true artist; and the result is a series of surprises as you pass from one room to another. The office is a study in itself, a fine large room, containing approaches to other apartments. In its furnishing it is at once solid and beautiful, the woodwork being rich antique oak, conveying an impression of great solidity. Here is a fire-place of the good old-fashioned kind, liberal in space, inviting in appearance. Near by is the gentlemen's reading-room, of Moorish design or suggestion, supplied with the literature of the day.

Adjoining is an attractive smoking-room; the wine-room, that is famous for its cellar; while a late innovation is the *table d'hôte* for guests and others, that has become extremely popular, "The California" being the fashionable resort for lunches and dinners among those who are epicurean in their tastes. Each of these apartments has attractions peculiarly its own; yet when the elevator is taken and the parlor floor is visited it is seen that there is an evolution in the splendor of the appointments,—that they increase as we

Ladies' Music Room.
Finished in Bird's-eye Maple.

go upward. The woodwork of the second floor is bird's-eye maple; and as we step into the hall it might from the richness of its appointments be the private residence of some connoisseur of art. The parlors with their rich tints are gems, and are well shown in the accompanying engravings. Of especial interest is the music-room, which is circular, about thirty feet in diameter and fitted in the most elaborate manner with all that taste and money can provide, the bric-a-brac, statuary and bronzes being from the choicest collections. This room is not the only one designed for the ladies: they have an artistic reading and writing room, elaborately furnished boudoirs in all the term implies. In fact everything that the eye could wish for has been supplied to render life here ideal and perfect. An inspection of all the rooms single and *en suite* is a bewildering study in tints, colors and artistic furniture; and in every room from top to bottom this same taste at once luxurious and practical is apparent, all the apartments having all the modern electrical appliances, duplicate sets of bells and other conveniences. The third and fourth floors are in sycamore; the fifth and sixth in red birch; and the seventh, eighth and ninth in natural oak, giving a most pleasing variety. Here high up awaits a fresh surprise, a ladies' conservatory, abounding in rare flowers and a wealth of tropical plants.

The Restaurant of "The California."

Here too is the elaborate banquet hall, where some of the most important and fashionable events of California social life have occurred. Here parties from the wedding feast to the theater party are served; while

elaborately fitted private dining-rooms serve for occasions more limited. Here also "The California" makes a notable display, its reputation for fine linen, cutlery, glass and exquisite taste in this direction being world-wide. The wine cellars alone have attracted the attention of connoisseurs, the private stocks of the best cellars of the world having contributed their treasures to make it perfect. So with the kitchens, cold-storage and other departments in the basement. The aim has been to attain perfection in hotel service, and the result is success. When upon the top floor one cannot fail to be struck with the elaborate appliances for protection against fire that Manager Kinzler has provided. The building itself of stone, is fireproof, and is lighted throughout with electricity from the hotel's private plant, giving 2,000 lamps; while in case of accident to the electric light a perfect system of gas has been supplied. Even if fire was possible, the guest is shown two separate lines of fire-escapes in front leading from the roof to the street below, while in each room is an automatic device which notifies the office of any unusual rise in temperature. Pumps are at hand, and hose is always attached ready to be used by the well-drilled corps of employés, who patrol the many halls all night, reporting to the office at intervals by the automatic clocks. In a word absolute security is assured.

"The California" makes a specialty of its restaurant and *table d'hôte*, the room being one hundred and twenty by thirty, and with its tiled floor, gleaming electric lights, the music of the orchestra and rich decorations, affords a vision of beauty that attracts hundreds each day to the *table d'hôte* who are not regular guests. The lover of billiards finds here the finest tables; in fact nothing has been omitted to render this hotel the most complete expression of the hotel-builder's art in this country or Europe. For the features referred to, and its complete sanitation, I congratulate Mr. Kinzler upon this his last supreme effort, and commend "The California" to all who desire so much excellence at the same rates one finds at other hotels. I should unhesitatingly pronounce "The California" the most perfectly appointed structure of the kind in the world, one well calculated to give San Francisco an international reputation as a city of hotels.

SAN FRANCISCO, Feb. 25, 1892.

Questions of the Day.

THE BOYS' BRIGADE.

EXPERIENCE has taught us here in San Francisco that the swiftest and surest way to gain control of the lawless element is to strike at the source of the evil by educating the little children from the very cradle. Humanitarianism has tried the reformatory, the Sunday school, the reading-room, the public school and the club; but the influence of all these has been but temporary and wholly uncertain in its results. Even with the kindergarten there is one serious drawback: it releases its hold upon the child too long before he has reached years of independent thought, discretion and discrimination, and leaves him to battle as best he may against evil home influences,—the pitfalls of a world into which he is too often forced as a bread-winner long before he is out of short trousers, and where, surrounded by companions old and hardened in vicious ways, he can scarcely look upon his kindergarten training as anything more than a dream or a memory.

With the middle and upper classes the public school supplements the kindergarten idea; and, if the parents have the means, the public-school discipline which tides the child over the most trying years of his formative period brings him under a discipline that is a pillar of strength in all his after life. The children of the poor frequently become bread-winners at a very early age. Not having known either school discipline or home influence, their lawlessness, which, however, is not willful, becomes a serious menace to the community.

In Scotland and England, after exhausting every means known to the philanthropist to reduce this element to a subjective and law-abiding condition, some bright man conceived the idea of appealing to the love for the military which is born in every boy. He organized little companies among the gamins in certain localities, fitted them out with coarse military uniforms, furnished an armory, and placed the boys under the same discipline that controlled the gorgeous pageantry of the Queen's own regiments. He never spoke to his boys as boys, but from the very first addressed them as privates or by their official titles as the case might be. He had regular inspections made by uniformed regulars of the British army, and inflicted the usual punishment for all lack of attention to personal appearance, all breaches of order and absences from duty. His scheme has worked like a charm, and has been taken up by one philanthropic body after another until now the Boys' Brigade, as it is called, numbers in England and Scotland alone a membership of eighteen thousand enthusiastic young soldiers. They have their reading-rooms, their coffee-rooms, their coöperative lodging-houses, and their places of amusement, all in connection with the well-fitted-out armories where they find everything to interest and amuse them. This movement has brought about as much of a revolution in the lawless element of London and other large cities as the kindergarten has done in San Francisco.

Quite recently a magazine has been started in New York City under the most favorable auspices, for the purpose of establishing this same order in America. It is suggested that such men as President Harrison, Chauncey M. Depew, General O. O. Howard, Abram Hewitt, Anthony Comstock, Cornelius Vanderbilt, Geo. W. Childs, or other persons of equal influence and wealth, should be appointed on the directing board of the American brigade so as to inaugurate the work under the most favorable auspices. It is a matter of deep gratification to us to feel that San Francisco is again in the lead, and has, as far as we know, just completed the first drill hall for the Boys' Brigade that has been built in the United States. It was formally opened on the evening of February 8th, by Rev. J. Q. Adams, president of the Boys' Brigade of the United States. This movement ought to prove itself as much of a formative influence as the great free kindergarten system of which we are so justly proud. Our kindergarten system tells its own story so strongly that the city of New York, though rather late in the day, has decided to establish a system of free kindergartens there, and has invited Mrs. Sarah B. Cooper to go

and organize the system, offering to place in her hands as a working nucleus the sum of $50,000. What Mrs. Cooper has done for the kindergarten children will now be done for the boys of the West.

THE NICARAGUA CANAL.

IN the present issue Captain Merry, the consul-general of the Nicaragua Republic at this city, begins a series of articles on the Nicaragua Canal. No question is more important to the people of this Coast to-day than this. It means everything,—a saving of time and money. Where there is one vessel in the ports of San Francisco and San Diego to-day there will be ten when the canal is a fact. Coasters from the Eastern States will find their way here, and business of every kind will increase; so that a new era of prosperity will begin. It is said by some, who oppose the canal for reasons of their own, that a railroad across the isthmus would fill the bill; but this is a short-sighted policy based upon ignorance. That a railroad there, is a desideratum cannot be questioned; but what railroad could transfer the cargoes cheaper than they could be carried through the Nicarauga Canal, by the ships that at present make the trip around the horn? In the present article and others to follow, the points upon which the great question bears will be plainly presented; and it is hoped that public interest in the work will be kept up, and the great work brought to a speedy consummation.

WANTED, AN ART MUSEUM.

IT is somewhat remarkable that a city of the wealth, culture and refinement of San Francisco is so devoid of any expressed art interest. An artist whose work has the stamp of genius recently told the writer that it was impossible for an artist to earn a living in the West. This might be true in any city in the land; yet there is something to be said on the other side. As a people the residents of this great city have not done their duty. When a city creeps up to a population of three hundred thousand it becomes a debtor to the people in many ways, one of which is to devote a certain amount of its energies to the cultivation of the masses. In brief it should be the duty of the city or the people or both to do something to tame the human animal. Food, work and clothes are not the only necessities of life; man needs the refining influence that association with refinement and culture alone brings, to bring him up to the concert pitch of high civilization.

It is fair to say that in this city there is not one man in five hundred who is a good judge of art. Hundreds of fine homes in this State, and others in the Western country, are beautifully decorated externally. The genius of the architect has done its share; but when we come to the interior, where the taste of the owner is displayed, the visitor is amazed. A thrill of horror creeps down his back at the display of "paintings," the heterogeneous commingle ment of compound contrarieties and worse. Such exhibitions are disastrous to the moral sense of the people. The writer knows an instance of a man, who had previously never told a lie, who was brought face to face with a collection of paintings of this kind, and when pressed for an opinion by the proud owner was forced to express himself as delighted, when in reality horror possessed his soul. But this picture-owner was not to blame. He bought what pleased him from the dealers. He had no types or examples of true art to study, from which to formulate a standard; consequently he was humbugged, and was perpetuating his taste in his children.

All this is the direct result of the apathy of the people; and, to come to the point, this city should have a museum of art in all the term implies, where the standards could be exhibited in painting, etching and sculpture. The lack of such an institution is not merely a cause of regret, but is a disgrace to a city of the size and wealth of San Francisco. As to the causes why an attempt has not been made to establish such an institution we know nothing; but the fact remains that it is by no means a difficult task if undertaken in the right way and by the right men. The city should be willing to provide a building in the Park, and appropriate an adequate sum for maintenance, and lectures on art subjects by qualified men. The cost of buying collections and subjects should be borne by the society.

The Metropolitan Museum of Art and the American Museum of Natural History in Central Park, New York, are carried on in this way. The society was formed among the men of wealth and taste in the city, who gave large donations and yearly fees to form a fund with which to buy specimens; then members of different kinds were elected,—a yearly member list including any person who would pay ten dollars a year. The result was surprising: hundreds came in, and a large fund was accumulated. The same can be done in San Francisco.

At least five thousand persons should be found in this city who would pay ten dollars per annum to begin an art museum; while the men of great wealth, of which there are many, should come to the front; and an art museum would rise with a quickness that would surprise those who now think the plan impracticable.

Who will take the initiative? is the question.

THE NAVAL OBSERVATORY CHIEF.

THE Naval Observatory at Washington is the objective at present of the small army of astronomers throughout the country. They have petitioned Congress to give the observatory a chief selected from the distinguished astronomers of the day instead of allowing it to remain in the hands of a naval officer, who has had no special training for the work. The question raised by astronomers is well taken, and if common sense prevails their petition will result in this important branch of the service passing under the control of some man whose life work has fitted him for it.

The change will not come without a struggle, but it is in the air and will become a fact in time. The selection of a director for an observatory is a most important question, and in Europe the most eminent astronomers are selected, as note the names of Flamsteed, Halley, Bradley and Airy of the English Royal Observatory; Cassinis, Arago and Leverrier of the French; Encke of the Berlin; and Wilhelm and Struve in Russia. These names are among the most distinguished in astronomical science. Some of the naval men who have had charge of this work have been a credit to the country; but it is evident that in a service of this kind a man can only attain perfection by making a life work of it. It is to be hoped that this position will be filled from the long list of eminent men who are members of the National Academy.

RAISE THE STANDARD.

THERE is room for a general overhauling in certain matters connected with the Government. At the present time we are supporting two expensive schools, one at West Point and the other at the Naval Academy. The taxpayers, the people, support them; and it is not improper that at times they should inquire if these schools are being utilized to the best advantage. At the very outset it may be said that they are not. These two schools produce better educated men than any university in the country. It is an impossibility for a man to graduate from either without being well equipped mentally and physically to represent the country,—a man of high honor, and a gentleman in all the term implies.

At present many graduates from the Naval Academy are being relegated to private life, because there is not room for them in the rank and file of the navy, which is on the face of it a waste of good material. We have in the Government a Coast Survey, a Revenue Marine and a Marine Corps, all employing officers. Whether it be a fact or not, the officers of these corps or departments have not the same standing as the officers of the line. Would it not be well for the Government to raise the standard of every branch of its service, and instead of educating a number of young men simply to turn them out into the world, to be called upon in time of war, to educate more and allow them to fill the vacancies in the several branches of the service. There is no reason why an officer of the Marine Corps should not be as competent a man as the lieutenant of the line, who stands beside him; but in many instances there is a vast difference. The man who fails at the Naval Academy, if he has influence, can, or could some years ago, gain access to the Marine Corps, the examinations for entrance to the latter being made lower; and to-day this corps is recruited from civil life. This is not as it should be. The standing of this corps should be immediately raised by recruiting its officers from the Naval Academy. So too with the Coast Survey and Revenue Marine; these positions should be given to men who have been educated for it, and our Coast Survey as well as others manned with officers who are graduates from the Naval Academy.

UNIVERSITY EXTENSION.

THE eagerness with which the idea of University Extension has been adopted in the United States is largely owing to the pioneer work projected by the Chatauqua circles and the countless summer schools of methods that have been the outgrowth of the Chatauqua course of study.

Here on the Pacific Slope, while we all have the ambition, the vitality and the receptiveness of mind that have been developed in more mature centers of culture, we have had so few facilities for expanding and stimulating intellectual action, that we welcome with an enthusiasm that is almost extravagant, these supplementary extension lecture courses.

In every new England village one may hear bright lectures, good readings and charming concerts all winter long. Here, while our population is all studying "at" something, it has never, until recently, made a practice of attending lectures and concerts; and even the most renowned speakers could not fill a hall or a parlor in any Western town or city.

The past year has changed all this with astonishing rapidity. The establishing of several new educational institutions, the active effort on the part of the University professors, and the responsiveness of the people, are doing in one year, what was the result of a quarter of century's effort in conservative England and lazy going New England.

NEW BOOKS

MISS ELIZABETH CURTIS, of the art school in this city, lately executed a set of illustrations of Jack and Jill of remarkable beauty and in exquisite taste. Miss Curtis followed the lead of Miss Thackeray, and idealized the personages in the old nursery rhyme, adding a few years to their ages, so that Jack is a well-grown lad, and Jill a sweet young maiden on the threshold of womanhood. Her pictures attracted the attention of the well-known connoisseur and patron of art, Mr. W. E. Brown, to whom the city owes the bronze statue of the ball-thrower in the Park; and, as he adds the gift of versification to the more solid qualities of a keen man of business, he wrote lines to fit the illustrations, and published the whole in one of the daintiest volumes ever issued on the Pacific Coast. The book is issued by William Doxey; and the proceeds of the sale go to the Silver Street Kindergarten, the first kindergarten established west of the Rocky Mountains. It is dedicated to Kate Douglass Wiggin, who founded that school on September 1, 1878, nearly fourteen years ago.

Mr. Brown has introduced the poem with a narration of the circumstance under which Jack and Jill were born; and this will be new to most of our readers. They were the offspring of the brain of Elizabeth Vertigoose, otherwise known as Vergoose, and finally as plain Goose, who on June 8, 1815, became the wife of Thomas Fleet, printer, of Boston, Mass., and subsequently made the acquaintance of all English-speaking nurseries by composing Mother Goose's nursery rhymes. Mr. Brown's rich imagination finds an allegory in the simple story:

Jack and Jill Went Up the Hill.

Jack and Jill
Went up the hill,
To fetch a pail of water;
Jack fell down
And broke his crown,
And Jill came tumbling after.

He sees in these quaint lines the tale of two ideal lovers,—too young to love wisely, but not too young to love well, who climb the hill in quest of happiness. Jack's fall symbolizes his surrender to Jill's charms; and she, in genial and sympathetic mood, comes tumbling after to signify that she accepts and returns his love.

They found new joys in every place;
The grassy fields seemed lovely parks;
And floating down etherial space
They heard the notes of unseen larks.

Thus hand in hand this loving pair,
On culinary thoughts intent,
Pushed out into the morning air,
And jointly braved that steep ascent.

having been fed on dry crusts. One sonnet, the most frequently quoted, rises above the general level and will bear reproduction:

A SEA GRAVE.

Yea, rock him gently in thine arms, O deep!
No nobler heart was ever hushed to rest
Upon the chill soft pillow of thy breast;
No truer eyes didst thou e'er kiss to sleep.
While o'er his couch the wrathful billows leap,
And mighty winds roar from the darkened west,
Still may his head on thy cool weeds be pressed,
Far down where thou dost endless silence keep.
Oh, when, slow moving through thy spaces dim,
Some scaly monster seeks its coral cave,
And pausing o'er the sleeper stares with grim
Dull eyes a moment downward through the wave,
Then let thy pale-green shadows curtain him,
And swaying sea-flowers hide his lonely grave.

Jack and Jill.

"At the Gate of Dreams" is one of the first of the volumes of verse to usher in the present year. James B. Kenyon's name is familiar to many as that of a prolific writer of magazine verse; and yet in all his work one finds but little to satisfy the real poetic sentiment. Perhaps it is because his forms of expression lean toward the material rather than the spiritual; however that may be, the poet-soul never bursts through its chrysalis and finds full expression. As a writer of prose Mr. Kenyon would doubtless have a smooth, flowing style, and would excel in the delineation of character pictures of the *genre* order; but as a poet he leaves us with the feeling of

Another bit that is perhaps as well known is an interlude, which begins:

Not every king may wear a crown,
Nor kingly be alone,
Whose heart beneath a purple gown
Throbs on a royal throne:
The kingliest spirits that have been
The world hath never known.

Quite different in poetic quality is "The Amazons," a heroic, dramatic poem following the Greek style, and written by Virna Woods, a Californian born and bred. One often hears murmurs of regret from those who have a genuine love of poetry, because of the decadence

of the heroic and the sympathetic in metrical composition. With the Howells school of fiction was inaugurated the supremacy of the *vers de société;* and yet how long does the memory of either school linger in our hearts, or how far does it exert any uplifting inspirational influence upon our lives. Walter Scott and Macaulay were machine poets; and yet the men who as boys were fed on Marmion and Horatius remember and can quote from those stirring poems to this day: but who, in the years to come, will find youth renewed in the rondeaus, ballads, triolets and sonnets of the present day? So it is with unfeigned pleasure that we welcome the occasional reappearance of the heroic in poetry. Miss Woods is not only thoroughly in sympathy with the Greek history that she ably handles, but she is an idealist as well. Her forms of expression have the fine quality that belongs to the poet who is born and not made. Men who have achieved imperishable reputations as poets have sometimes missed the divine touch of idealism. This fact is most patent in the two poets Milton and Dante. Milton was the idealist who stimulated the spiritual and the vague imaginativeness of his countless readers. Dante was the materialist who called forth in the minds of his devotees images of actual size, shape and appearance, where Milton's were indefinable and indescribable. Now in "The Amazons," quite apart from the dramatic quality which is almost inseparable from Greek heroic poetry, we find the poet and dreamer reaching out to our highest and finest soul-sense with the most exquisite delicacy.

We watch the rising of the sun and mark
Its upward path, and follow its descent
Below the earth; but, when we see the world
Slow moving in the orbit we call Time,
A broken arc is all that we behold,—
A fragment only of the mighty whole,
That orbs itself from ancient primal dawn
To the yet distant mystery of night.
How small a thing is one poor human life,
In the majestic unity that makes
The human race; and yet, when it is lost,
And like a sea-shell stranded on the shore
Lies at our feet, we feel more bitter pain
Than for the mighty multitudes of dead,
The driftwood of unnumbered ages gone.

* * * *

Like the dawn that melts away,
Drowned in the heart of day,
Life is beautiful and brief;
Death the dropping of a leaf.

What could be more delicate than this description of Penthesilea the Amazon, lying silent in death?

Like a lily fallen
Lies she there;
Like the lily's pollen
Is her hair.

Rise her face and bosom
From her mail,
Like the perfect blossom,
Pure and pale.

Like a lotus blooming
In the reeds,
When, the shadows glooming,
Day recedes.

Like a white uplifted
Asphodel;
Like its petals drifted
As they fell.

MUCH might be done to stimulate a deeper love and appreciation for the art of the past, if there were more writers like Margaret Vere Farrington to supply the missing chain of poetic association which history and romance combine to produce in the mind of the somewhat too material modern art-fancier. In the real art-lover, association of events that have combined to produce a beautiful picture is one of the strongest elements; but to the rank and file a story printed or told is indispensable to evolve the halo and the glow which should always mellow the tones of canvased stories. In "Fra Lippo Lippi" there is an unusual descriptive power shown, rich in sentiment yet simple in treatment, that gives one the same feeling of restfulness and satisfaction that is to be found in the enjoyment of a home of refinement and wealth, where the appointments are perfect and elegant, but so well associated that one's only impression lies in the sense of grateful repose. Fra Lippo Lippi was a man, very human, therefore lovable; a genius, with all the instability, loyalty, tenderness and restlessness that is the bone and sinew of genius; not bad enough to be wholly condemned by the religious brotherhood that he deserted, yet not good enough to be of them. And Lucrezia? What more can be said than that she was a woman, very human, very childlike, very loving? She too was not fitted for the religious life, and she therefore laid aside the dark garb of the sisterhood for the equally sacred garb of motherhood and wifehood. And the atmosphere of Florence and the lesser Italian cities, with their crumbling cathedrals, their fading frescoes, their floods of sunshine, their patches of dirt and squalor, their smiling skies, their hillsides and vine-covered trellises,—only a hand that loved them could paint them with such a firm, tender touch; and only a soul that could feel the soul of the past, and that was a willing pupil in the midst of the strange monuments of the past,—only a dreamer and an idealist,—could invest the silent skeleton with a living, breathing body once again.

THERE was a time when the good old-fashioned farmer laughed to scorn the city-bred gentleman who bought an adjacent tract and talked about analyzing soils, supplying deficient chemical elements, and making brains do the work of hands wherever it was possible. In these days, however, farming has become as much of a profession as medicine or the law. We have chairs of agriculture in our universities; and, while the financial condition of the farming class has not undergone any remarkably favorable evolution, the general status of the farmer and his family has risen mightily in the scale of civilization Recently on effort has been made to introduce into the schools a text-book on the "Principles of Agriculture," compiled by I. O. Winslow, A. M. It is an admirable little work touching upon the leading facts and principles of chemistry, natural philosophy, geology, physical geography and botany.

"AN ABANDONED CLAIM," by Flora Haines Loughead, is a charming story for young people. While the human kaleidoscope does not bring into the experience of many of us such children of sterling qualities and mature judgment as these that are woven into Mrs. Loughead's story, yet there are such, and they deserve to be immortalized as ideals to stimulate the less self-reliant ones. Such a book is the best book a parent could give to a child; for this is a tale of real life, real adventure, real hardship, and real triumph over circumstances. As to the picture of farm life that it gives,—I am sure Mrs. Loughead will forgive a furtive simile; but we who have had our little experience have not found oranges, figs, apricots, green peas and the like responsive to anything save unlimited capital and eternal vigilance,—even here in balmy California!

"MOTHER'S HELP AND CHILD'S FRIEND," is an excellent hand-book for the family, touching as it does upon the many phases of the physical, moral, mental and spiritual development of children from the earliest infancy to maturity. It abounds in helpful hints that cannot fail to meet the questioning demands of all classes of parents. The author, Mrs. Carrica Le Favre, is well known in New York as an advocate of the Del Sarte system of expression. She has recently taken editorial charge of one of the departments of a new magazine in New York called *The Beacon*.

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1. "Jack and Jill." Adapted by W. E. Brown. Illustrated by Elizabeth Curtis. William Doxey, San Francisco. $2.50.

2. "At the Gate of Dreams." Rev. James B. Kenyon. Charles Wells Moulton, Buffalo, New York. $1.00.

3. "The Amazons." Virna Woods. The Chautauqua Century Press. $1.00.

4. "Fra Lippo Lippi." Margaret Vere Farrington. G. P. Putnam's Sons. $2.00.

5. "Principles of Agriculture." I. O. Winslow, A. M. American Book Company.

6. "An Abandoned Claim." Flora Haines Loughead. Houghton, Mifflin & Co. $1.25.

7. "Mother's Help and Child's Friend." Carrica Le Favre. W. T. P. A., Chicago.